THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXV.—No. 3949. OCTOBER 11, 1918.

THE LONDON SOCIETY AND ITS WORK.

THE outbreak of war in 1914 marked the end of a phase in the development of London in which overlapping control and complexity of government had been yearly becoming more pronounced, whereas the prolongation of the war, with its consequent truce to petty considerations has given an opportunity for the inauguration and development of proposals which in the past would rightly have been rejected as unrealizable if not impracticable. It is recognised that the whole world, alike of conditions and ideas, has been violently shaken, and a ferment has been set up out of which may come either good or evil. It was fortunate, therefore, that so public-spirited a body as the London Society existed to meet the emergency. Instead of being overwhelmed by the world upheaval, they have made use of it as an opportunity for preparing for that period of reconstruction which it is fully realised must inevitably follow the declaration of peace. Some of the valuable works recently undertaken by the Society are of such public interest that they may be briefly commented upon here.

The Imaginative Map.

The imaginative map, just completed, is indeed of monumental character, and should prove of cumulative value. Here is shown the whole of the London area extended and beautified, including a complete system of radial and circumferential roads, parks, parkways, playgrounds and open spaces linked up and inspired by that imaginative note which, if the people have courage and their leaders clarity of vision, will result in the Metropolis becoming the most convenient and seemly of the world's great cities; following this comprehensive study the developments and building of the future should be arranged in proper and pre-determined order, and so contribute to the unity and beauty of the whole; persistent effort alone being required to bring this to maturity. At the present day London is not fully comprised within a fifty-mile radius. A considerable proportion of the population who earn their livelihood in Central London now live in places so far distant as Brighton in the south, Hitchen in the north, Southend in the east, and Aylesbury in the west, consequently the importance of its uniform governance cannot well be overrated, and a strong and really effectual traffic and development authority to deal with all problems of traffic within this great area is urgently needed. To this the Society is giving earnest study, as it is realised that if London is not to be strangled by its very immensity a solution must be found for the difficulties incident to complexity of government. It is sincerely hoped that a scheme may ultimately be promulgated which will secure not only the approval of Parliament, but also the support, or at least the benevolent neutrality, of the principal local authorities.

Railway Services.

The systematising and co-ordination of the different railway services entering London is another very complex and very urgent subject to which close attention is being given; this is nearly related to many other problems under consideration, and some very interesting conclusions and proposals may be looked for. These and other fundamental and constructive investigations are specially useful at the present time. A large and influential Parliamentary Committee is devoting keen consideration to every proposal likely to effect the well-being and amenities of the community, whilst a series of lectures on subjects of local and of general interest, inaugurated before the war, is being continued and attracts ever increasing audiences. By these and other means much has already been done towards the correct formation of public opinion, as can be witnessed in such important projects as the Charing Cross scheme. It is proposed to abolish the unnecessary railway behemoth over the river, and to substitute a vehicular bridge, to be the nucleus of a great improvement on the south side. On the other hand, the proposal to erect a bridge near St. Paul's Cathedral will probably not be revived, as enlightened civic instinct seems to be definitely opposed to a bridge in this location as redundant and unnecessary.

Open Spaces.

The basis of all national progress, whether industrial or social, is the health and physical efficiency of the people; the conditions which exist in our overcrowded areas too often render healthy life impossible. The creation of further open spaces is essential, not merely to the efficiency of the working-class but to the health and character of the nation. The Society holds a clear brief in the matter of existing open spaces and similar assets and any attempt at encroachment is jealously watched. During the last few years, St. Peter's-square, Hammersmith, has been secured to the public. The fine eighteenth century houses in North-street, Westminster, have been saved from destruction. Modifications have, we believe, been agreed to in the plans of the proposed new General Post Office, in order to safeguard St. Vedast, Foster-lane, and the attempt to encroach upon Edwardes-square, Kensington, has been frustrated. Still more recently, half at least of the site of St. Olave's, Southwark, has been secured to the public. While much encouragement is being given to the efforts to save the fine old Swedish Lutheran Church in Prince's-square, St. George's-in-the-East, with its surrounding churchyard, very soon we hope this, too, may be secured as a much-needed open space and welfare centre for this densely populated neighbourhood.

But Rome was not built in a day, neither will the London to which we look forward. A beautiful, ordered and well governed city would be an inspiration to the ends of the earth, for it has been well said that civic beauty satisfies a craving of human nature deep and compelling, and that cities which truly exercise dominion rule by appeal to the higher emotions.

Civic Societies.

The ideal civic responsibility, besides tending to promote good citizenship, was never more necessary to our large towns than at present; civic societies are needed to study the fresh problems, to preserve what is good and influence the developments of the future. Societies similar to the London Society have been started in Liverpool and Birmingham and Leeds, all places well-known for their progressive civic spirit; and, we hope, precursors of civic societies in all towns of any size or importance in the kingdom, and if these can be persuaded to work in affiliation, so much the better, as the combined influence should prove of inestimable value and an immense asset to the development of an enlightened civic spirit throughout the country. Already new housing schemes of vast extent are more or less agreed by Parliament, and the great opportunity which now presents itself must with clear vision and collective action be taken full advantage of. The day of the doctrine of personal irresponsibility is gone; no stronger appeal can be made to the citizen than to enter upon the service of creating better surroundings, not only for himself and for his time, but for those who either now or in the future must make London their home, for no one in these times is justified in claiming civic rights unless he fulfils his civic obligations. It seems probable that we stand at one of these definite turning points in history where a generation of men has it in its power to determine the course of the future. Perhaps one of the most beneficial results of the present strife will be a keener consciousness of corporate life, and the efforts of civic societies will be of great value in arriving at such a consummation.

NOTES.

A National Architecture.

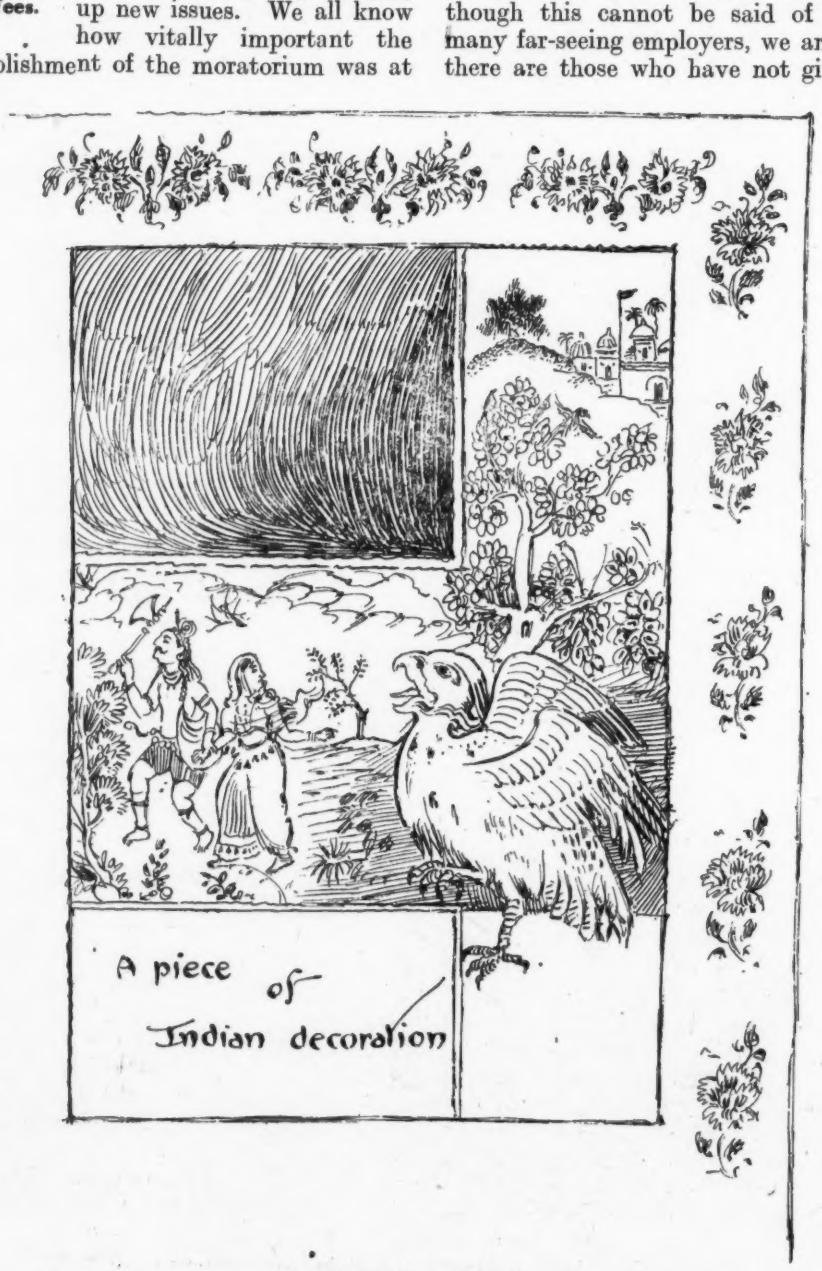
PROFESSOR LETHABY has much of interest to say in his second article on "A National Architecture," which we give elsewhere. He makes some characteristic observations which appear to be particularly happy, and to express sound common-sense. It may be contended that many of his remarks on construction are the A B C of an architect's education and practice and yet, as he says, "A constructive sense would soon produce disgust for the crudity of the damp, draughty, ill-lighted, cold and cracked houses we live in." A good many architects have this constructive sense and feel this disgust, but we fear there are those who have not; and in saying this we are not forgetting that a large number of the houses we live in are not designed by architects at all.

Patent Fees.

THE pressure of war difficulties is continually bringing up new issues. We all know how vitally important the establishment of the moratorium was at the beginning of the war, and now, after four years, we find the recurring charges for renewal fees for patent rights are inflicting a burden which might surely be relieved. We have a case before us which illustrates this point in a letter we publish in this issue. We strongly maintain the great importance to the country of encouraging private enterprise to the utmost extent possible; we all know how much discouragement it has had to face in the past, and we sincerely hope a better policy may be pursued in the future.

Relationship between Employer and Employed.

THE letter from "Works Manager," which we give on page 224, is of some interest at the present time, when the problem of reconstruction after the war is properly receiving so much consideration. He contends that masters who are adepts in the selection of material often fail when it comes to the selection and control of labour, and though this cannot be said of a good many far-seeing employers, we are afraid there are those who have not given the matter sufficient attention. As our correspondent says, this attitude has cost contractors a good deal.



A Decorative Panel.

[One of the daintiest little pieces of book decoration we have seen is the small panel of which we obtained a sketch some time ago and now reproduce. There is a distinction and simplicity of treatment about some of these old designs which students would do well to emulate.]

The Restoration of York Merchants' Hall.

WE are glad to learn from a contemporary that the domestic part of the Merchant Adventurers' Hall in Fossgate, York, has been restored. For many years the fine old house which fronted the hall has been used as a caretaker's residence, and had lapsed into a very neglected and derelict condition. Mr. H. E. Leetham, the governor, has signalised his tenure of the office by undertaking the restoration to their original condition of the domestic apartments, and, with the assistance of Dr. Maud Sellers, the historian of the Merchants' Company, and now curator of the Hall, has had in view the educational significance of the work. There have been no structural alterations, but the accretions of more than a century's occupancy have been removed. Wall-papers and coats of plaster which completely hid the fine old oak timbers in wall and ceiling have gone. The timbers have been carefully scraped and cleaned, the fire-grates which obscured the open fireplaces of Tudor character have been removed, and their places filled by the open steel grates which stood in the bricked fire-places. Other details have received attention, and the final result, we understand, is most happy.

The Nation's Water Supply.

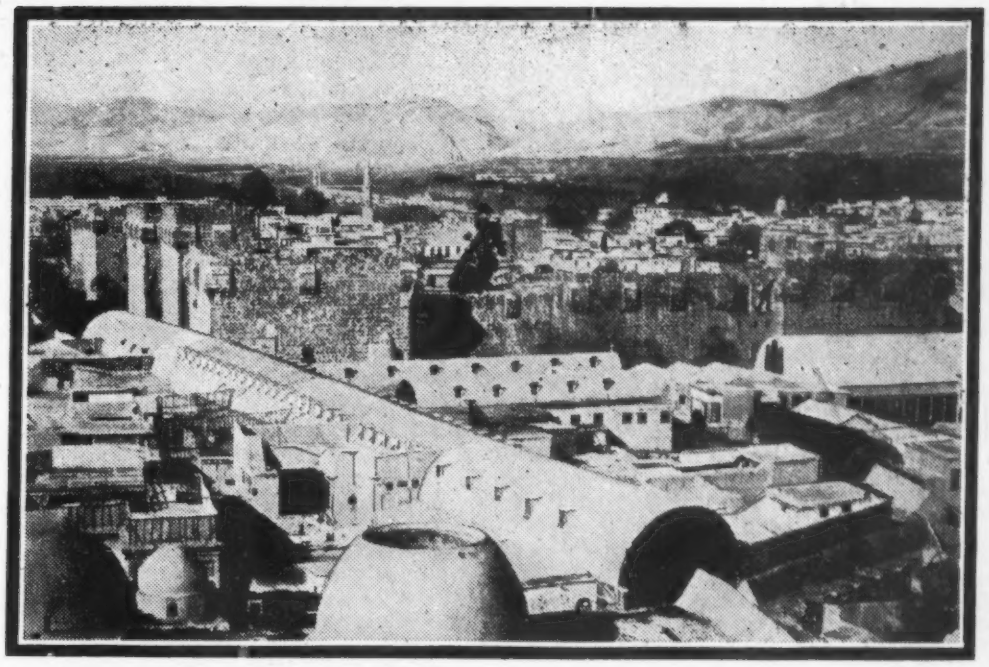
AT the recent annual meeting of the Municipal Waterworks Association at Birmingham the suggestion was made whether the time had not come when the Government should exercise some control over the nation's water supply, so as to secure for each town and district an adequate quantity of water based upon population at a reasonable cost. The Lord Mayor, Sir David Brooks, said that many of the large watersheds had already been secured, and it seemed to him that it would be prudent if there were some superior authority which might be able to decide in what way the remaining sources could be best utilised for the benefit of the nation. Mr. C. G. Henzell, in a paper on the national control of watersheds and other sources of water supply, said there was no doubt that in the near future the Government would take up the question of the allocation of the remaining watersheds throughout the United Kingdom, and especially those in England. In view of this, was it not time they considered the subject with the purpose of formulating a scheme that would have weight with the Government, or whomsoever they might appoint to deal with it? We are glad that the author outlined a scheme by which the Association might help and advise the Government in dealing with the question of water supply. Nearly all the most accessible areas have now been taken up, and the time appears to have arrived when the Government should take action.

Cottage Housing.

THE forthcoming publication of the series of prize designs in the recent L.G.B. and R.I.B.A. cottage competition in an official form is announced, and it appears that these will be put forward as models for the quarter of a million new cottages required throughout the country. The terms of the competition called for designs specially suited for the various districts of the country, but our general impression of the premiated designs was that there was less variety of design than might have been looked for. Scotland has, of course, been provided with special designs of its own, apart from the above-named competition, and it is clear enough to anyone acquainted with the Scottish landscape that the little grey cottages dotted about amongst the hills leave little desire for the adoption of the red walls and tiled roofs of southern England, which would almost savour of an impertinent intrusion in the north country. It is said that already the various local authorities have promised a provision of 250,000 cottages out of the 300,000 required. But we cannot help wondering whether a large amount of repair and alteration could not be carried out in the fabric of existing old cottages. The worst difficulty about this, perhaps, is the lack of dry foundations and walls; but this should not prove insuperable. We have architects who could, we believe, so rehabilitate our old cottages that their picturesque charm might be preserved whilst making them thoroughly habitable; but this is not a sort of work which every architect or builder is capable of doing.

Relics of Previous Civilisations.

IT is to be hoped that proper attention will be paid to the view expressed in the columns of the *Observer* by Professor Flinders Petrie on the responsibility of this country for the relics of previous civilisations in the eastern countries now under the control of our Armies. Professor Petrie is not so much concerned for those which are known as for those which are not known—lying buried beneath the soil in sites which he thinks should be at once reserved for excavation by trained archæologists before the private claims arise and the exploitation sets in, which may be expected now that the tyranny of the Turk is overpast. There is this at any rate to be said for the abominable rule of the Turk that the discouragement of enterprise and material progress caused by its oppression has possibly resulted in the preservation of buried evidences of the dawn of civilisation which might have been destroyed by normal progress under a more enlightened government. It is for us to see that western civilisation does not destroy what eastern tyranny has preserved. Professor Petrie suggests that civilian archæologists be immediately sent over armed with powers to schedule all likely places, and take measures for their protection before it is too late. All those interested in architecture and archæology will doubtless support this suggestion.

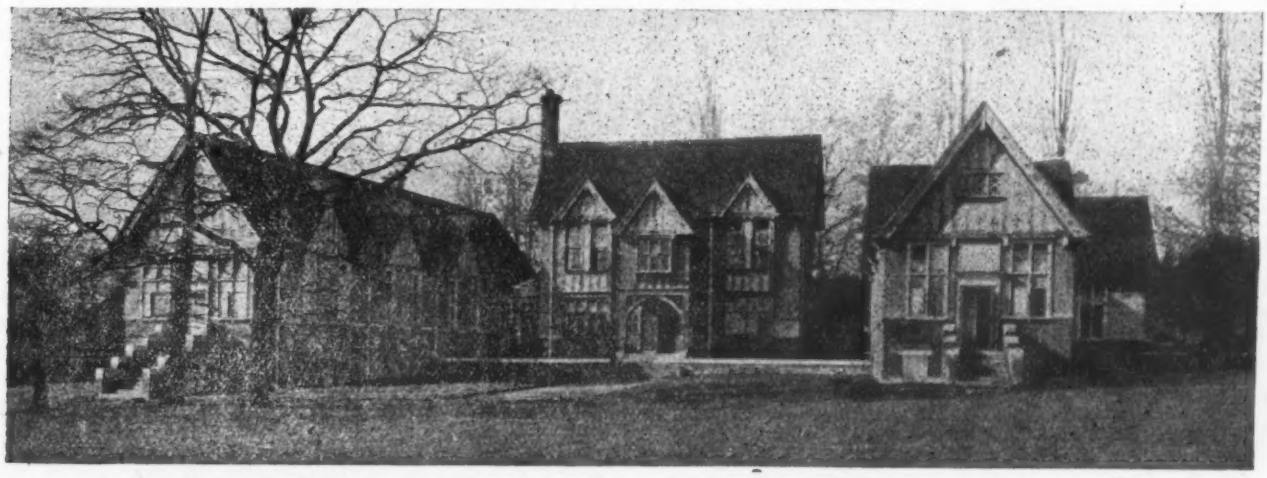


A View of Damascus.

The Allied Forces entered Damascus last week, and this view will be of interest in the circumstances.

The Future of Jerusalem.

PROFESSOR FLINDERS PETRIE makes suggestions also for the future of Jerusalem which merit serious attention. In anticipation of western enterprise, he points out that Jerusalem is entirely unsuitable for a business city; that it is only a quarter of a mile across, has no proper access, no water, and is soaked with sewage. He proposes the erection of a modern city and the gradual clearance of the old one; and the removal of comparatively modern erections, so that the town may be restored to its original Jewish form, and be thus preserved as a sanctuary for the three faiths—Jewish, Christian and Moslem. There is much to be said for this proposal, though "restoration" is a word we have learnt to distrust. In any event, it is obvious that Jerusalem cannot be left to the tender mercies of the vulgar commercial exploiter. Could not a commission, including technical men, be appointed to enquire into the matter and report?



Royal Commercial Travellers' Schools, Hatch End, Pinner, Middlesex: Dormitory Buildings. (*See p.* 228.)

MR. THOMAS BATTERBURY, ARCHITECT.

CORRESPONDENCE.

Cob-Buildings.

SIR,—Your recent reference to Lord Portsmouth's recommendation to the Devon County Education Committee leads me to send you the following notes :—

During a visit to Devon, I endeavoured to obtain information with regard to "cob buildings," many such existing between the Exe and the Fal, erected years ago when bricks were not readily obtainable. The agent to an estate at Cockington kindly assisted me, and a man, some sixty years of age, remembered his father, a farm hand, being employed in the erection of cob-buildings. The material used is soil containing some clay mixed with lime and straw cut about 4 in. in length. Rough stone is used for the foundations to some 12 in. above the ground surface. The outer walls are some 2 ft. thick, the material being rammed between boarded sheeting, carried up in courses, keeping the levels uniform. Lintols of roughly cut timber are built in where required, and the openings subsequently cut for doorways and windows when the work becomes sufficiently homogeneous. The chimneys are built of stone or brick. The roofs are mostly thatched with straw, with good eaves for protection, and internal partitions of timber. The external and internal wall-faces are plastered and whitewashed, and the ground floor made of lime-ash. I found no building entirely of cob more than one story high; in two-story buildings the lower is generally of stone, or at least so faced. Whether cob-building can at the present time be economically reintroduced remains to be tested in districts where certain requisite materials are available, leaving the easily transported joinery, ironmongery, glazing, &c., to be furnished from the nearest workshops.

That "cob-houses" may be dry, durable, and of equable interior temperature, seems to be generally admitted, and it is to be hoped that others may be induced to furnish further particulars in view of "after-the-war" problems.

FRANCIS HOOPER.

Relationship between Employer and Employed.

SIR,—I have read with interest your articles on reconstruction after the war. The problems confronting the building trade, with all other sections of the business world, are no doubt numerous and not easy of solution. Labour, materials and general conditions are receiving and will receive all the consideration of the ablest minds, and the great machine of capital and labour will in due course be again turned into the channel of peace production. There is, however, one aspect of this great question which has never received and is not now receiving the consideration it deserves; if it did, I am convinced it would prove a most valuable asset in the future of the business world. My conclusions are from a practical and life-long experience of the question from all its aspects, having been through all the grades from apprentice to manager. The point to which I refer is the relationship between employer and employed. I am aware that it bristles with difficulties, but it is not peculiar in this respect. I have been surprised often to find masters (and in this respect, I mean managers and general foremen), who have been adept in the selection of material, fail when it comes to the selection and control of the more important element of labour.

This has arisen largely from the disinclination to recognise in the working man anything more than a human machine—to make it accomplish sufficient work to make a job pay. This attitude has cost the contractor many thousands of pounds which would otherwise have gone into the profits.

It is surprising that so important a consideration has received so little attention. The more so that clever and discerning minds, capable of dealing with the difficult and perplexing problems of business generally, should overlook so obvious a means of profit. Material is a known quantity; this cannot be said of labour. We may estimate that so much work will be done by a man in such a time, but, after all, it is a speculation. Incompetent men will make mistakes resulting in the loss of time and material. Discontented men will do the minimum quantity of the worst possible quality, besides spreading a harmful atmosphere around them. Even the product of the best workmen is largely regulated by the conditions under which he works and the treatment he receives. This all points to the necessity of making a special study of the human element. The war has proved that the working man is brave and true in the main. Instances have come to light of those who have been treated well and trusted by their officers, doing exploits which may be truly called marvellous. My experience, fairly large in the selection and control of men, is that with careful selection and generous and kindly treatment, the greatest amount and the best quality of work can be secured, and in cases of emergency the men can be relied upon for extra exertion. There is a great deal to be said on this subject and many illustrations in proof of the value of thes e considerations.

I am aware that conditions resulting would be a distinct advantage to the *best* workmen; but it is entirely from the employers' standpoint that I am looking.

WORKS MANAGER.

A Moratorium for Patents.

SIR,—You would confer a great benefit by urging a moratorium for patentees during the war. It is a great hardship to find that the Patent Office is pressing for renewal fees. In my own case, which has to do with building, I have been unable to exploit my patent or to dispose of it. The manufacturers have all been engaged on munitions and, as you know, building has been practically stopped. In addition, I have been out of employment for three out of the four years of war, and find it hard to be called upon to pay renewal fees.

A further grievance is that the renewals count from the date of *application* instead of the date of *acceptance* of patent. Thus, I am called upon to pay, not for the *fourth* year, but the third, as it took twelve months to get my patent through.

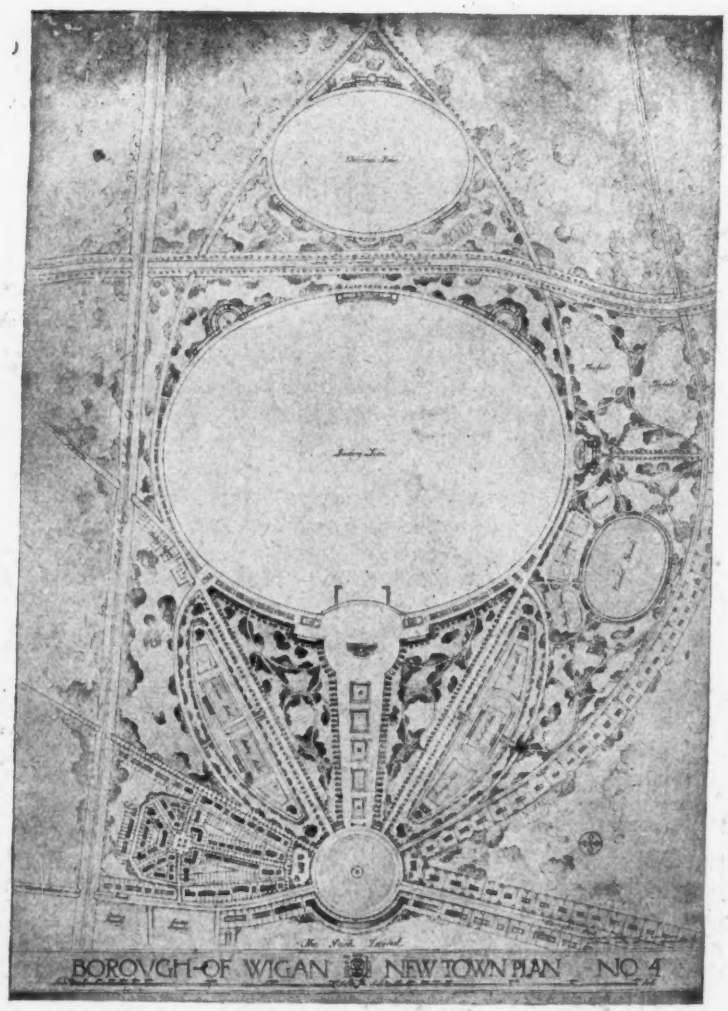
A SUFFERER.

Air Raid Casualties.

SIR,—The Committee on War Damage are about to present to the Government returns of casualties which have resulted from the enemy raids by aircraft and bombardment. The returns are from areas having a population of more than 1¼ millions. We shall be obliged if you will publish this letter so that Town Clerks and clerks of urban and rural areas which have been attacked and from which returns have not been received may know that the returns should be sent to our Honorary Secretary, Mr. W. H. Southon, 40, Chancery-lane, London, W.C. 2. The particulars included in the returns are: 1, date of each attack; 2, number killed; 3, number wounded; 4, estimated cost of making good damage to property. Information is also desired of cases where there were attacks and no material damage done.

MARK H. JUDGE, Chairman.

7, Pall Mall, S.W. 1.



Suggested Lay-out of Water "Flashes" to form Park, with suburban development.

BY MR. GORDON HEMM.

Lever Prize, 1916-17, Liverpool University Department of Civic Design.

...ministration of Criminal Justice

GENERAL NEWS.

The Manchester Art Gallery Competition.

ANOTHER stage in the long-drawn-out comedy of the Manchester Piccadilly site and art gallery discussion has been reached, and the City Council have passed the following resolution: "That, as the Art Gallery Committee and the Libraries Committee had definitely decided that their requirements could not be met by the erection of a combined building, the Council should abandon altogether the idea of having one building for library and art purposes, and should direct the payment of Messrs. Crouch, Butler & Savage (the authors of the selected design for the erection of a proposed library and art gallery on the Piccadilly site) of the sum of 500 guineas, the balance of the premium payable to them in accordance with the terms of the competition under which the design was submitted."

The R.I.B.A. Record of Honour.

Lieutenant James Sydney Cable, Royal Garrison Artillery (Associate). Died on September 5 from an accidental gunshot wound.

Lieutenant Charles Herbert Hartmann, Royal West Kent Regiment (Associate). Killed in action on July 2. Lieutenant Hartmann, who was elected Associate of the Institute in 1914, was the younger son of Mr. and Mrs. Augustus Hartmann, of 14, Kensington-square, W. (formerly of Weybridge, Surrey). He was educated at Banstead and Charterhouse, afterwards studying architecture at the Ecole des Beaux-Arts, Paris, and with the late John Belcher, R.A., in London. On the outbreak of war he joined the Artists' Rifles, and subsequently obtained his commission in the Royal West Kent Regiment.

Lieutenant Thomas Henry Chalkley, Machine Gun Corps (Student). Killed in action at Croiselles on August 29. Lieutenant Chalkley, who was born in 1885, served his articles with Mr. C. G. Boutcher, and was afterwards in the office of Mr. W. Campbell Jones.

Intimation has been received that the following are serving, bringing the total, as far as information has reached the Institute, to seventy-nine Fellows, 540 Associates, 336 Licentiates, and 300 Students.

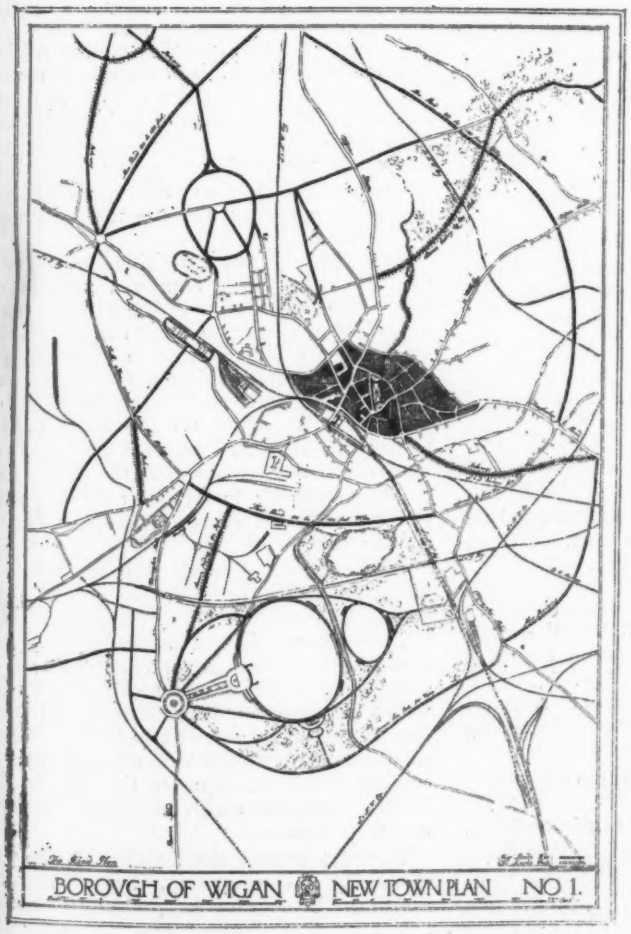
Liverpool and the Housing Problem.

At a recent public meeting on the subject of housing, promoted by the Liverpool Reconstruction Council, Mr. B. Seebohm Rowntree, member of the Reconstruction Housing Committee, said that bad as was the state of affairs before the war, it was worse now as regards housing, because there had been no building since the war began. The first essential was to get rid of the slums. Liverpool was doing splendidly before, faster than almost any other community, but he hoped that the whole community was going to quicken its pace. If Liverpool wanted to keep its front place, its pace would have to be quicker than in the past. He pleaded for a better class of houses for the working people in the future. The shortage of houses in Liverpool, which it was urgent to remedy, was about 6,000. Those 6,000 houses would have to be built for the most part by the local authority. Some people were hoping that the private builder would be able to put them up, but he did not think he would. Of course the private builder would erect the houses, but the planning of them and the determination where they should be placed would be in the hands of the elected representatives. Let them not be satisfied with a low standard of houses. Liverpool had been an example to the rest of the country as regarded slum clearance; let them be an example to the rest of the country as regarded the class of houses erected in the future. There was nothing to prevent the Liverpool housing scheme being the finest in the kingdom.

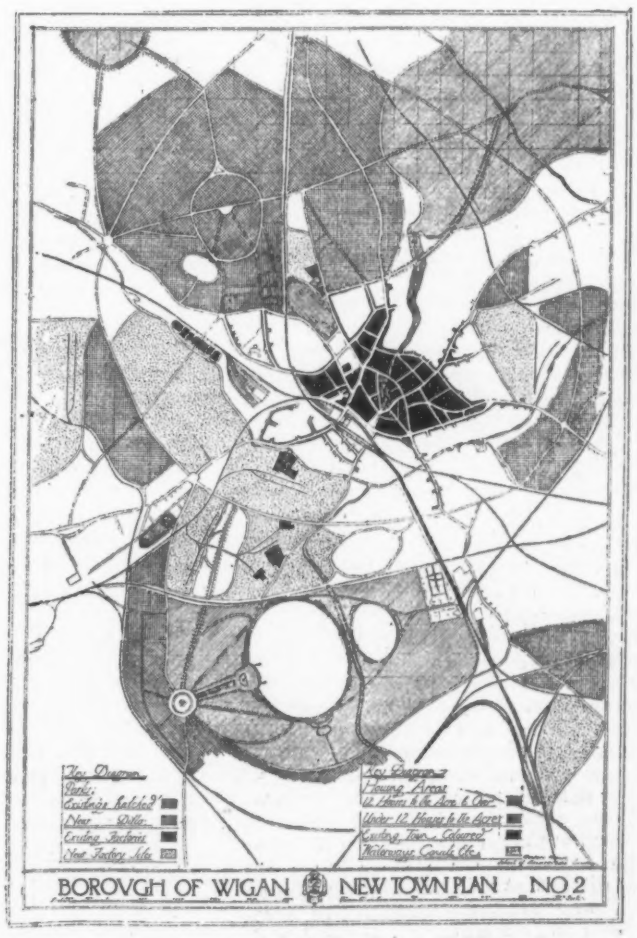
UNIVERSITY OF LIVERPOOL.

DEPARTMENT OF CIVIC DESIGN.

THE need for a systematic study of town planning and housing need not be emphasised at this moment It is well known that the Government intends that half-a-million houses shall be built during the period of reconstruction after the war, and it is essential that full consideration be given to the best way in which the houses shall be planned, grouped and disposed in relation to existing towns and villages. The first part of a course on the subject at the Liverpool Department of Civic Design, which began on the 8th inst. and leads to a certificate, aims at giving a general outline of the subject, accompanied by practical examples worked out by the student. The diploma, which may be taken at a subsequent session, is concerned with original design and advanced study. For the past two years the subject for the Lever Prizes (open to all students in the department) has been a "Reconstruction Study of an Existing Town." By dealing with an actual example, the student is brought into contact with the manifold and inter-related issues involved; and the drawings which we reproduce give some idea of the way in which such a development plan is treated. A full description of this study, which was awarded first prize in 1916–17, will be found in the *Town Planning Review* (the journal of the department) for April, 1918. The department has recently moved to new quarters, at 61, Ashton-street, opposite the New Arts wing of the University.



Plan showing new Road, including Ring Road.



Plan showing suggested utilisation of areas for different purposes.

Wigan Scheme of Development. BY MR. GORDON HEMM.

Lever Prize, 1916-17, Liverpool University Department of Civic Design.

FUEL ECONOMY IN PRIVATE HOUSEHOLDS.*

By A. H. BARKER, B.A., B.Sc., Wh.Sc.

Lecturer in Heating and Ventilating Engineering, University College.

IT is of the utmost importance to understand that it is not the heat which we use which is so expensive, but that which we waste. It is said that the maker of Colman's mustard, who made a vast fortune out of selling mustard, claimed that his success was made not out of the mustard which people ate, but of what they left on their plates.

In the same way, fuel economy is not so much a question of not using heat when we want it, but of not wasting so much of what we buy as we do now. There would be no coal problem at all if no heat was wasted. When we have bought the fuel we have received the heat all right, and if we do not waste it there is far more in the ration than can possibly be needed by anybody.

As I have said, heat is a thing which will escape whenever, wherever, and however it gets the chance. The trouble is that we cannot see it escape, and we have not, as a nation, enough imagination to understand that it is wasting, although we cannot see it. We allow it to run away just as if it cost nothing. We treat it with mu h less respect even than we do water. No person of ordinary sense can pass a water-tap running water to waste without an instinctive desire to turn it off, although the water may be a mere dribble.

It may be said at once that practically all the methods of using heat in an ordinary household are grossly extravagant, and that they allow an absurdly large proportion of the heat to escape uselessly. The methods we use are so grossly extravagant that they amount to a scandal and a disgrace, not only to the householder but even more to the manufacturers of the appliances supplied for the use of heat.

Very few indeed of the ordinary domestic appliances use more than one-quarter of the heat in the fuel, and the great majority considerably less than that. A coal range uses on the average only 3 per cent. or about one-thirtieth part of the heat in the fuel. An open fire turns perhaps 10 or 15 per cent. into really useful heat, the remainder being all wasted. I am speaking of useful heat and not of the radiate l heat, which is quite a different matter.

It is evident that before we can analyse this matter satisfactorily, we should look closely into the figures representing the efficiency of various methods of using the different kinds of heat that we may buy. I cannot promise that you are going to listen to an easy story. This question of efficiency is an exceedingly difficult one, but it is absolutely necessary that it should be understood if this important matter is to be grasped.

It is even impossible to give figures which correctly represent in all cases the efficiency of various appliances without a great deal of tiresome explanation of the principles involved. It is impossible, for instance, to understand the heat used by and relative advantages of such things as gas fires and coal fires and the relative advantages and effect of open fires, gasfires and radiators or stoves without some comprehension of the essential differences between these two methods of heating. The figures without the explanations would often be misleading and even meaningless. I must beg therefore for close attention while I endeavour to explain a very difficult and complicated matter. The same thing applies to various methods of using heat for cooking purposes, for water boiling and water heating, and other similar things.

In order that the matter may be considered intelligently, I propose to discuss in outline the principles of the application of heat for all domestic purposes. For that purpose we shall have to consider first how heat is used in a household, and consider the various sections in turn. I shall afterwards be in a position to give a very definite and reasoned opinion on the relative advantages and the economy of the three kinds of heat as applied to the various services in the household, founded on experiments made in the laboratory. But in order that I may be able to discuss the coal ration at the present stage, I am compelled to forestall some of my conclusions by giving now some figures representing generally the efficiency of various appliances, with a warning that a proper understanding of these figures involves a good deal of close attention. I shall in future articles give the full reasons for these conclusions, also explain the many exceptions.

I propose now to discuss the fuel ration.

FUEL RATION.

We are all acquainted with the fact that the Coal Controller has told us in the last month or two that in future, until the present stress is past, we are to be limited in the amount of fuel that we may buy. I wish first to make it quite clear what the ration really means, as, simple though it is in reality, it appears to confuse some people.

In order to make it clear we will put it in this way—

Every householder may have :

(1) Allowance of either gas or electricity nominally for lighting, but really for any purpose for which it is required.

(2) An allowance of what may be called "fuel," which may be taken out either as coal, coke, gas, or electricity. The allowance is named as "standard" or "nominal" tons of "fuel."

1 nominal ton of fuel is either
1 ton of coal,
1½ tons of coke,
15,000 cub. ft. of gas, or
800 units of electricity.

We can take our fuel out in any or all of these forms quite independent of the allowance for lighting. Now let us look at this order.

(1) **Lighting Allowance**—

For the lighting allowance we can choose either gas or electricity in the proportion of 1 unit of electricity to 62 cubic feet of gas, and we can choose it quite irrespective of the question whether we actually use gas or electricity for lighting. That is a very important point. I shall revert to the question of the lighting allowance in a moment, when I have discussed the equivalents.

(2) Fuel Allowance—

It may be recalled that by the Coal Controller's regulations, one ton of coal may be exchanged for 15,000 cubic ft. of gas, or for 800 units of electricity. Now to convert all these quantities into heat units, the following is the Coal Controller's equivalent :—

1 ton coal = 31,400,000 B.T.U. = 100 %.
15,000 cub. ft. gas = 7,200,000 B.T.U. = 23 %.
800 units electrical = 2,730,000 B.T.U. = 8·7 %

It must be explained, however, that these equivalents were determined by the Controller not in relation to their value to the consumer at all, but in relation to the amount of coal which is destroyed. Of course both gas and electricity are produced directly from coal. We destroy so much coal in a certain way and produce so much gas or so much electricity. The fact is that 15,000 cubic feet of gas produced at the gasworks causes the destruction of approximately the equivalent of one ton of coal, certain other factors and considerations being also taken count of. Similarly, 800 units of electricity generated at the generating station when the plant is of good quality causes the destruction of one ton of coal.

These figures presumably represent the Coal Controller's idea of respective amounts of fuel which it would be equally detrimental to the interests of the State to have destroyed taking all circumstances into consideration.

Incidentally it may be remarked that the Coal Controller was very generous—in my opinion too generous—in allowing so much as 800 units of electricity for one ton of coal. This figure was based on the idea that at the electric works 2½lbs. of coal has to be burnt to produce one unit of electricity. This figure is only attained in a few of the best plants. In ordinary works the figure is nearer three.

It is thus a matter of indifference to the Coal Controller whether the consumer destroys one ton of coal in the form of coal or gas or electricity. The Coal Controller is only concerned to see that the consumer is only allowed to destroy one ton of fuel, leaving it to the consumer to determine how he shall destroy it, either in his own house or at the gas works, or at the electric generating station.

It is important, therefore, for the consumer to understand the relation of these heat quantities as far as he is concerned, so that he may know which is the best way of taking out his ration.

The first question that arises is whether we shall take out our lighting allowance as gas or electricity. Let me explain that the relative allowances for lighting were determined by the Controller so that approximately the **same amount of light** could be produced by the gas allowance for lighting as by the electricity allowance.

The representatives of the gas and electrical interests were called into consultation with the Controller—I had the honour to be one of their number as a sort of independent and uninterested party—and the question was discussed on that basis. It was laid down as one of the fixed terms of reference that there was to be a special and separate allowance for lighting.

This question had nothing to do with equivalents; it was simply a question of how much light can be produced by so many cubic feet of gas or so many units of electricity. In my view it was an extremely unwise decision and exhibited regrettable confusion of thought and want of fixity of purpose. To fuddle up the order in this way by making two separate and different bases of calculation has made the whole order incomprehensible to all but a few educated persons and will cause endless trouble and confusion.

It was a sort of weak attempt to hold a judicial balance between the gas and the electric interests, and showed that the persons who determined it had no clear comprehension of the question involved. The basis of calculation was that one unit of electricity would produce as much light as 62 cubic feet of gas. Now this fact and these reasons should have no weight with a householder in coming to his decision on this point. He should consider which allowance is more useful to him.

The fact is that the lighting efficiency of electricity is considerably greater than the lighting efficiency of gas, by which I mean, not that the electric light is necessarily superior to gas light, but that of 100 units of heat energy supplied as electricity a greater proportion is converted into light than with 100 heat units supplied as gas. Thus it happens that the lighting equivalents

* Continued from page 196, September 27.

of gas and electricity are such that the amount of gas for a certain amount of light contains about ten times as much heat as the electricity supplied for the same amount of light. Hence, the heat equivalent of the gas is greater than the heat equivalent of the electricity allowed, and is in so far more valuable to the consumer.

There is, therefore, no question that if you use gas at all, either for lighting, cooking, water heating, or room warming, it is to your advantage always to take out your light allowance as gas rather than as electricity, because, whatever the size of your house, the lighting allowance is by far the better value in heat units.

It is true that in certain cases electricity can be used with a less proportion of waste than can gas, but the difference in this respect is not sufficient to make up for the vast difference in the number of heat units bought for a given sum. Indeed, it is quite safe to lay down the following rule for the guidance of the householder. That the principal, and practically the only domestic, use of electricity in present day conditions should be for lighting, or perhaps for power in those very rare cases where electrical power is used in the domestic sphere.

The amount of fuel used to produce electric light is quite insignificant. A small or medium-sized house can be well lighted by electricity for an expenditure in coal at the electricity works of from a quarter to a half ton per annum, and for the same amount of nominal fuel a house can be well lighted by electricity. Hence, you should never take any electricity as your lighting allowance, but take what electricity you require out of your total fuel allowance. It may be mentioned, too, that from the point of view of fuel allowance, a bit of extra light is of no practical consequence. You will always burn twice or three times as much fuel in your kitchen range in a month as you will use in light in a whole year.

It should then be a definite rule never to take out any electricity as lighting allowance.

Next comes the even more difficult question, how you should take out the fuel allowance. I have shown on a diagram which I have prepared the amounts of heat corresponding to one standard or nominal ton of fuel. It is shown that the amount of heat corresponding to the coal and coke is enormously greater than that corresponding to a nominal ton of fuel taken out in the form of gas, or, still more, of electricity.

Unless, therefore, we can use gas or electricity to very much greater advantage than we can use coal or coke, it is self evident that it would be very foolish indeed to take out any of our ration either as gas or electricity. If we take it as gas we should lose roughly three-quarters of the units of heat that we may buy if we take it out as coal. Of electricity we should lose some 87 per cent. of the heat units which we might have if we took it out as coal.

The rule is, therefore, take everything in solid fuel that you can possibly use, and do not exchange any fuel whatever for either gas or electricity unless you are obliged to do so for some special reason, such as :—

(1) The light you require.
(2) That you have no coal range, or,
(3) That the superior convenience of the gas range or gas fires practically compels you to use gas.

Remember that whatever you take out in fuel as either gas or electricity you always lose heavily in doing it.

It is quite true that you can use both gas and electricity with a much less proportional loss than you can solid fuel. This is true in all cases, but the difference in efficiency is in no case great enough to justify taking out the fuel as either gas or electricity, unless you are compelled for some such reason as is named above.

I will give some general figures to illustrate this point with the proviso that in order to be thoroughly understood, some of the explanations which will be given in the next succeeding articles must be observed. In an ordinary case one can do as much cooking with one ton of fuel in a relatively economical coal range as with 28,000 cubic feet of gas. In a relatively extravagant range one can do as much cooking with one ton of coal as with 20,000 cubic feet of gas.

In the first case you are sacrificing 50 per cent. of actually useful heat units by taking gas, and in the second case 25 per cent. of your heat units, making all allowance for the superior efficiency of the gas range. The cost of the coal is just about one-third of that of the gas, so that for pure cooking purposes it is clearly not worth while to exchange one ton of solid fuel for 15,000 cubic feet of gas, always unless the superior convenience of gas cooking makes the exchange worth while. As to this only the housewife can decide for herself. Sometimes it is ; generally, I think, it is not.

I have been speaking of pure cooking, not including supply of hot water. The case is as bad, in considering the supply of hot water. Here it is always extravagance, either from the point of view of fuel economy or of cost, to use gas for the supply of hot water. The only justification for gas is when hot water cannot be supplied otherwise, as in many apartment houses, where there is no central hot water supply.

Hot water can be supplied by means of solid fuel in suitable apparatus very economically. Even a very extravagant hot water supply apparatus using solid fuel is much more economical than is any form of gas heated boiler. One ton of fuel will even in an ordinary range supply as much hot water as 20,000 cubic feet of gas in an ordinary gas boiler and about as much as 15,000 cubic feet in a geyser, at about two-thirds of the cost.

As regards warming by gas fires as against coal fires, one ton of coal will do the same work in an open fire as about 30,000 cubic feet of gas at about one-third or one-quarter of the cost ; so that, here again it is not justifiable to exchange one ton of coal for 15,000 cubic feet of gas unless the superior convenience of the gas fires makes it indispensable, as very often it is, especially in modern conditions of labour scarcity.

There are indeed cases where the only possible way of warming a room is by a gas fire. To build up a coal fire is not to be thought of. There are cases of smoky chimneys, and other similar cases also which make a gas fire a necessity. But it should be understood that a gas fire is an expensive luxury as compared with a coal fire.

Now, as to electricity, it is practically never justifiable to use electricity for the supply of heat for any purpose whatever, either for cooking, water heating, or house heating, except when the quantity of fuel wasted and the expense do not matter at all. In a time of fuel shortage or of money shortage the only justifiable use of electricity in domestic establishments is for lighting, or, in some very few cases, where power is used for power-production. To use electricity for any other purpose for the production of heat, either for cooking or warming, is absolutely unjustifiable, when the saving of fuel and of money is a paramount consideration. It not only causes the destruction of more fuel at the electricity works than either gas or solid fuel burnt in the house to produce the same effect, but it also causes more labour at the electric works, and much more expense to the householder.

Of course, it saves domestic labour. It is by far the most convenient and the cleanest method of using fuel, but both the gas and the electricity supply companies have adopted what seems to me to be the stupid policy of making it impossible to use either gas or electric power with any pretence at economy by the absurd charges which they see fit to make for gas or electric power.

Now let us compare coal and coke. Here we have the difficulty that the quality both of coal and coke varies considerably. The coke that is bought at the present day is the filthiest kind of rubbish that could be dignified by the name of fuel. In some cases it is practically impossible to burn it at all. In most cases it contains about one-quarter of its weight in ash. A recent sample which I tested in the laboratory was shown to contain 28 per cent. of its weight as clinker and ash.

It is further allowed by the companies to stand out in the rain, and it absorbs a large quantity of water, as much as 20 per cent. ; that is to say, the householder in buying coke is paying one-fifth of his money for the rain which has fallen on to the coke. For this reason one should be very cautious indeed in buying too much coke. It may, and possibly will, be found to be such rubbish that it cannot be burnt. It often makes a lot of clinker and a heavy dust.

Where the coke is of moderately good quality it is very good to take as much of the ration in coke as can possibly be used, but the uncertainty of the quality of the coke makes it very doubtful whether the householder is wise in loading himself up with too much, except for such purposes as boiler heating and so on. I can only advise that a trial ton or two of coke be bought, and that a trial be made with it.

When coke is good, it is very useful as well as cheap, both for open fires and for range work.

(To be continued.)

BOOKS.

The New Moon : A Romance of Reconstruction. By OLIVER ONIONS. (London : Hodder & Stoughton. Price 6s. net.)

THERE is a special interest in this book as apart from a work of fiction, for the author has endeavoured to set forth, so far as the limitations of fiction have allowed, the scheme of the Industrial Reconstruction Councils, which are the present means of giving effect to the recommendations of the Whitley Report. The general principles are given in the simplest outline only, no attempt having been made to apply these principles to the individual characters of particular trades ; and the result is a very suggestive and thoughtful book, which will familiarise readers not only with the recommendations of the Whitley Report, but with some of the possibilities of the future. The author deals with the period after the war, when this country is carrying out schemes of reconstruction which result in "higher wages, shorter hours, better health, output five times as big," and, at the same time, paying off our debt "at a rate that makes the French after '70 look like a lot of beginners." How it is all done we will not attempt to describe, though the following quotation may suggest one of the ways : "We're making capitalists hand-over-fist. In the old days the Socialists used to fight the capitalists, but we soon found that we hadn't half capitalists enough. Why, I've given thousands of shares away to my people—*shares*, mind you, not profits. It pays ; my men don't work just for me now, nor even for the Trade, but for their own hands as well." The book is a most interesting one and can be recommended as a contribution on reconstruction.

Leading Contents.

	PAGE
THE LONDON SOCIETY AND ITS WORK	221
NOTES	222
CORRESPONDENCE	224
GENERAL NEWS	225
FUEL ECONOMY IN PRIVATE HOUSEHOLDS	226
BOOKS	227
A NATIONAL ARCHITECTURE—II.	229
DATA FOR COTTAGE BUILDING	230
NOTES FROM THE FOREIGN PRESS	230
MEMORIAL TABLET TO MAJOR H. PHILLIPS FLETCHER, D.S.O.	230
WHAT CONSTITUTES UNPROFESSIONAL PRACTICE IN ARCHITECTURE	231
EXHIBITIONS OF THE WEEK	231
THE FUTURE OF ARCHITECTURE	231
THE BUILDING TRADE	232
THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY—II.	232
WORKMEN'S COMPENSATION: ILLEGAL CONTRACTS	232

ILLUSTRATIONS.

Edinburgh Picture House.

AMONGST our illustrations we give Princes-street Picture House, Edinburgh, by Mr. Robert Atkinson and the late Captain Alexander. A glance at the plan given in the text will show how very difficult it was to arrange the auditorium. Besides being a considerable distance from the street, three floors of stock and bedroom accommodation had to be provided above the auditorium to meet the requirements of the Royal Hotel. The general contractors were Messrs. James Millar & Sons. Messrs. Henry Hope & Son, of Birmingham, supplied the casements; Messrs. Bellman, Ivey & Carter were responsible for the Scagliola marble columns; the plaster work was supplied by the Bromsgrove Guild; Messrs. G. Jackson & Son, Ltd., did the modelling and bronze-work; and Messrs. Hampden supplied some of the furniture. Mr. Ogalivie, of Aberdeen, carried out the wood panelling.

Entrance Doorway, Australia House.

One of the best pieces of detail in the new Australia House is the fine metal framing to the entrance vestibule, which incloses the Van Kannel revolving door, with an ornamental clock case over it. Our illustration gives a good idea of the excellent way in which this decorative metal work has been carried out by Messrs. Ramsay, Ltd. The door has been made by the Van Kannel Revolving Door Co., Ltd., of 62, New Broad-street, London, and it is the heaviest revolving door ever manufactured by this or any other company, weighing approximately three tons. Notwithstanding this weight, the mechanism is so perfectly adjusted that the merest touch easily manipulates it.

Royal Commercial Travellers' Schools, Hatch End, Pinner.

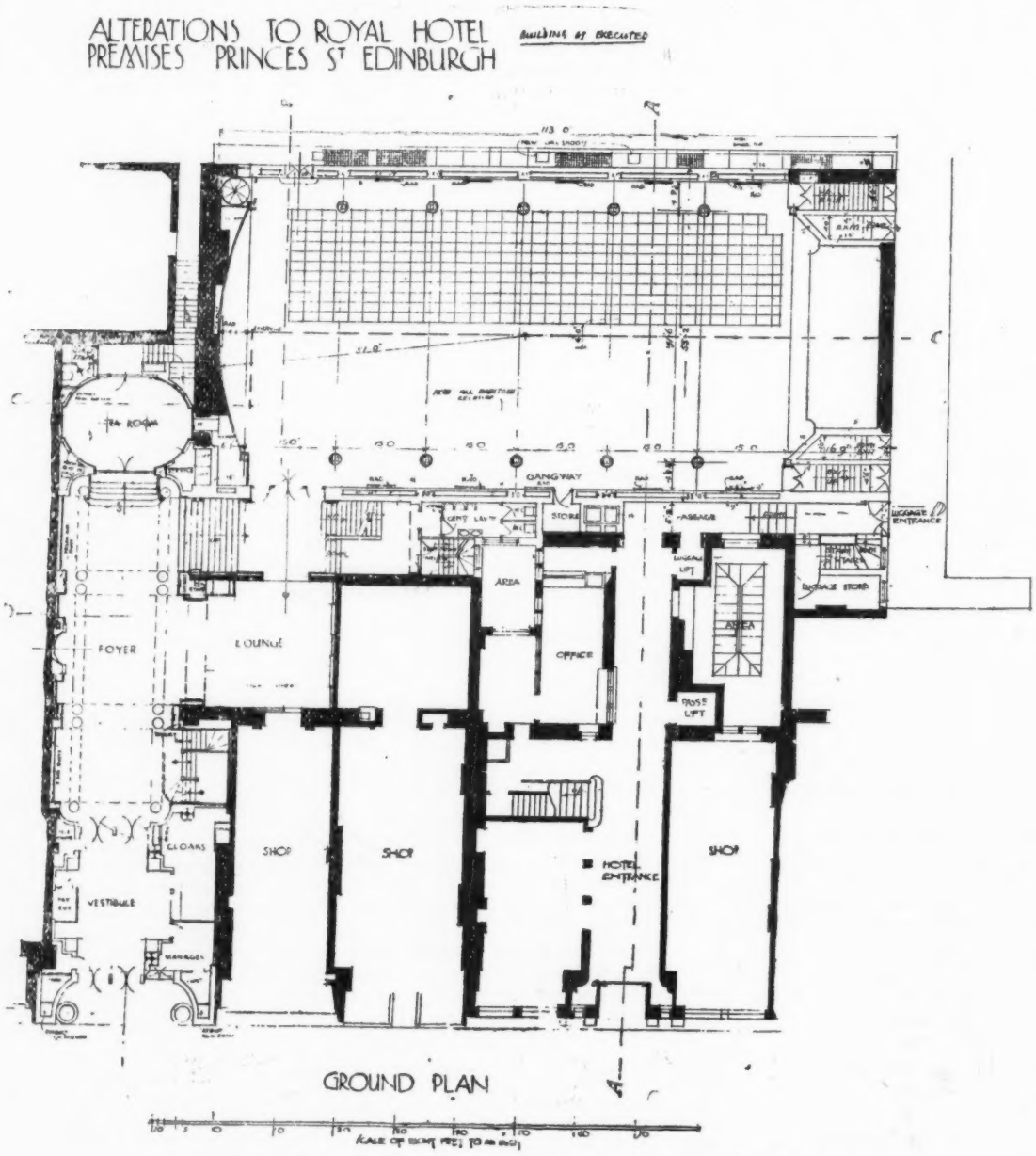
The buildings illustrated have already been shown by a perspective drawing, which we published some little time ago. In the execution of the work, Lawrence's red bricks, Cooper & Son's tiles and Portland stone were used, the half-timbering, &c., being of English oak. The buildings were erected by Messrs. Dove Bros., of Islington, from the plans and under the superintendence of the architect, Mr. Thomas Batterbury, of Bank Chambers, Southampton Buildings, Chancery-lane, W.C. 2, and Eltham. Photographs of the buildings formed the exhibit, No. 1316, in this year's Royal Academy Exhibition.

War Shrine.

The picturesque war shrine by Mr. Frank Hawkes, which we illustrate, is made by Messrs. Strange & Sons, of Tunbridge Wells. It is one which will probably be widely appreciated.

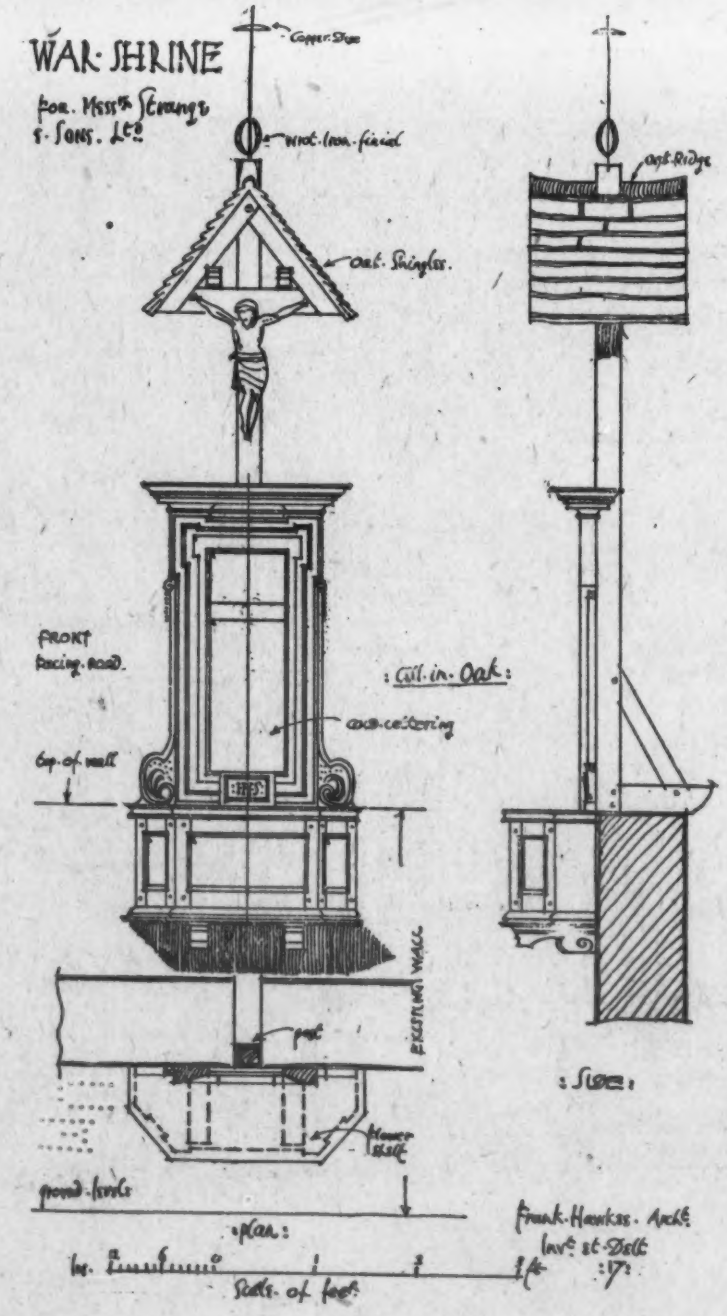
Hilton Village.

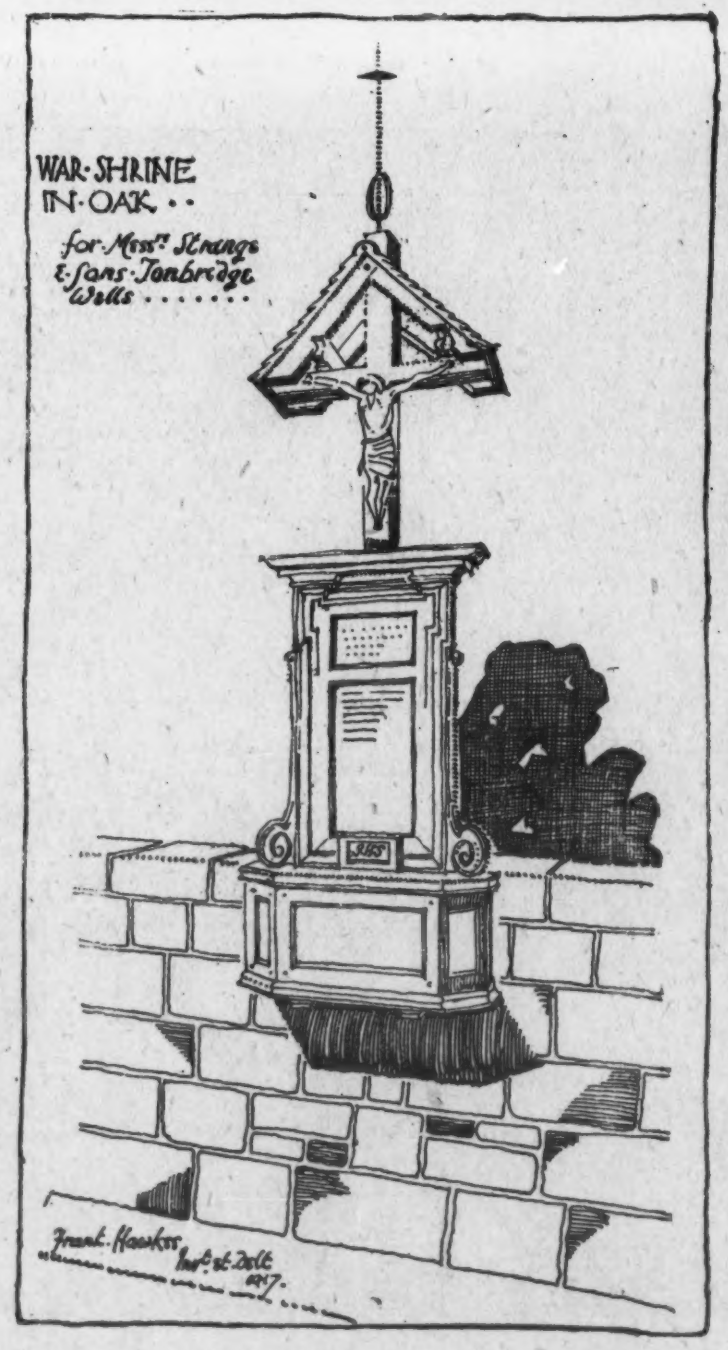
Last week we gave some illustrations of the Hilton Village, which is one of the war emergency developments in America. We now give further interesting types of the plan.



The New Picture House, Edinburgh: Ground Plan.

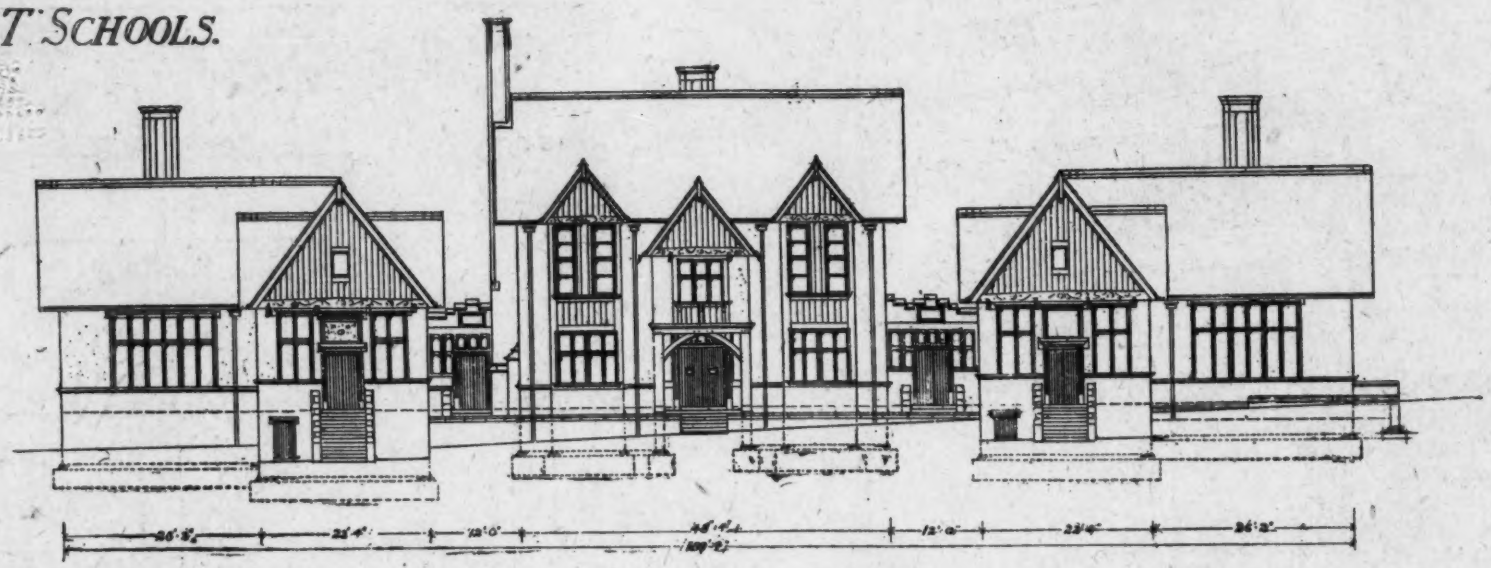
MR. ROBERT ATKINSON AND THE LATE CAPTAIN G. L. ALEXANDER, ARCHITECTS.



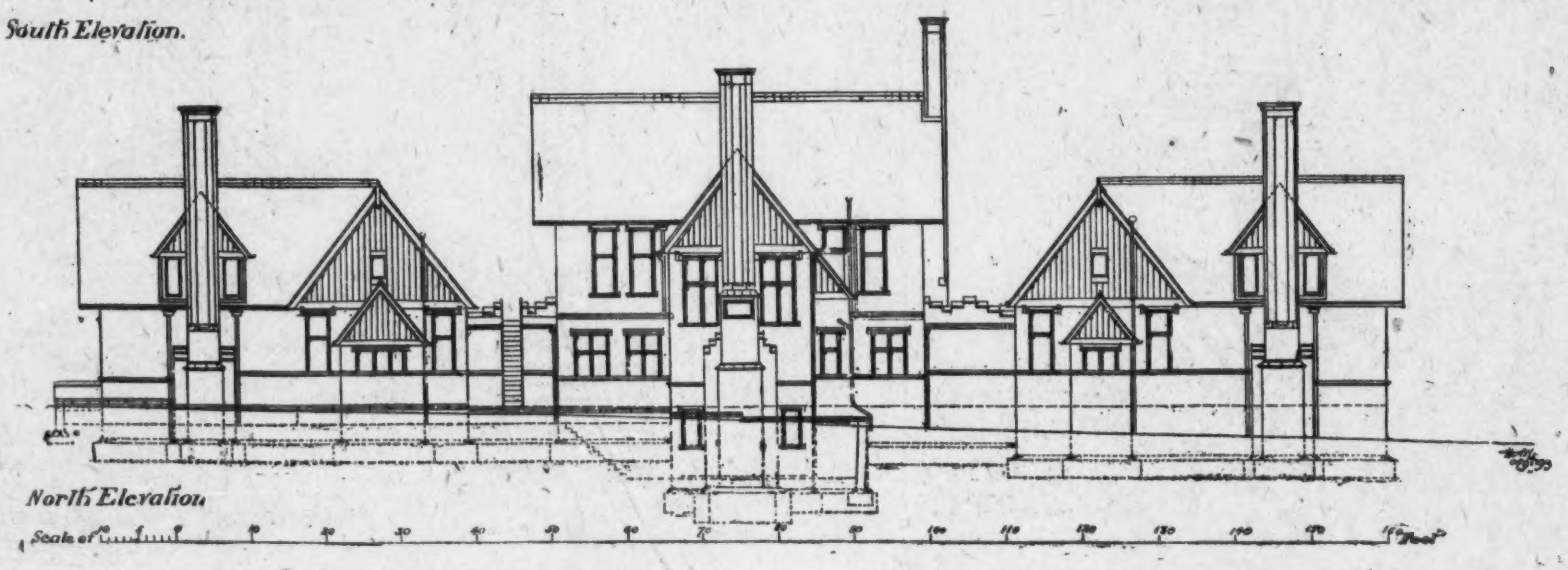


WAR SHRINE.—MR. FRANK HAWKES, ARCHITECT.

C.T. SCHOOLS.



South Elevation.



North Elevation

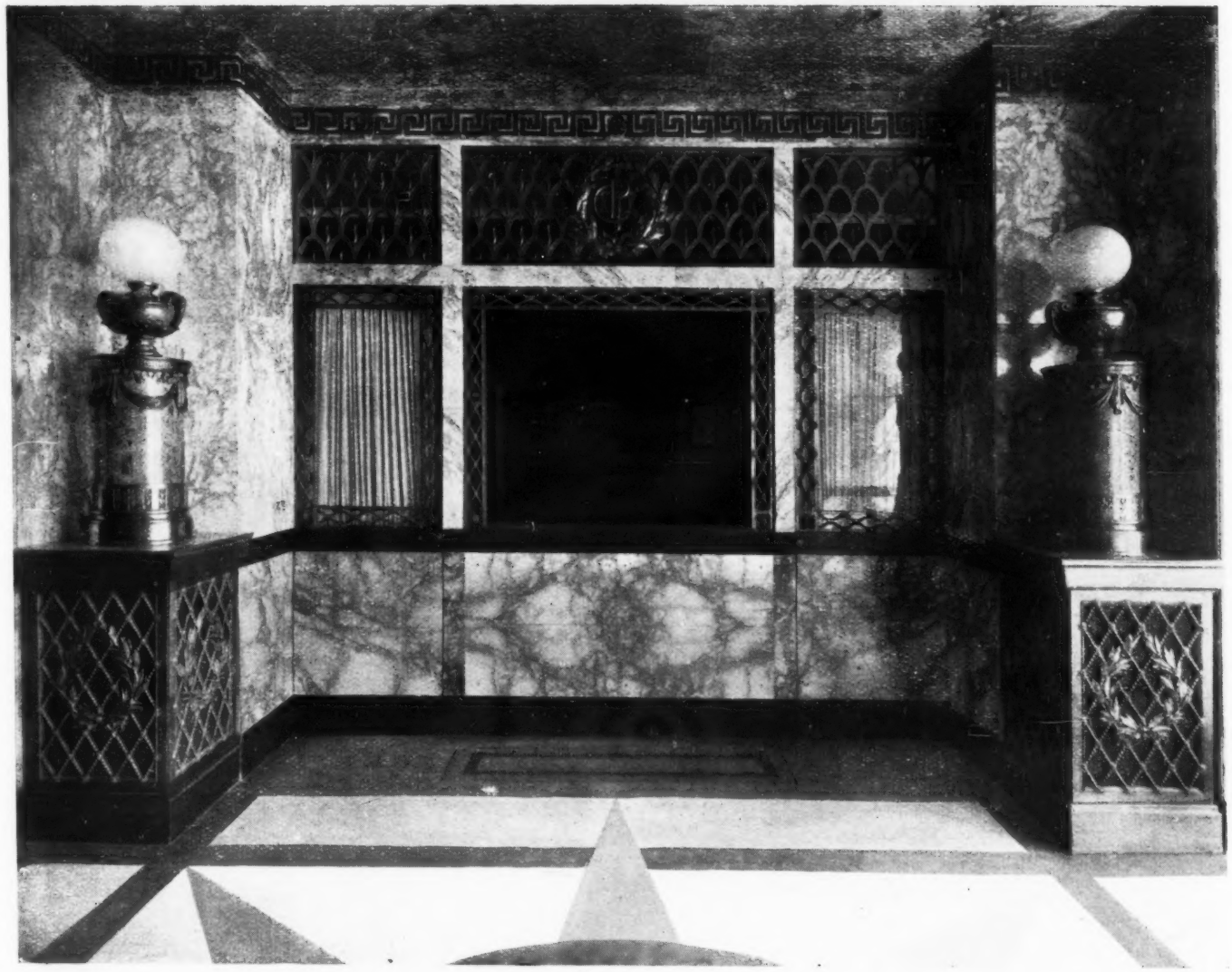
Scale of Feet

ROYAL COMMERCIAL TRAVELLERS' SCHOOLS, HATCH END, PINNER: NEW DORMITORY BUILDINGS.

MR. THOMAS BATTERBURY, ARCHITECT.

ENTRANCE DOORS, AUSTRALIA HOUSE, STRAND.

Dr. Marshall Mackenzie, R.S.A., and Mr. A. G. R. Mackenzie, F.R.I.B.A., Architects.

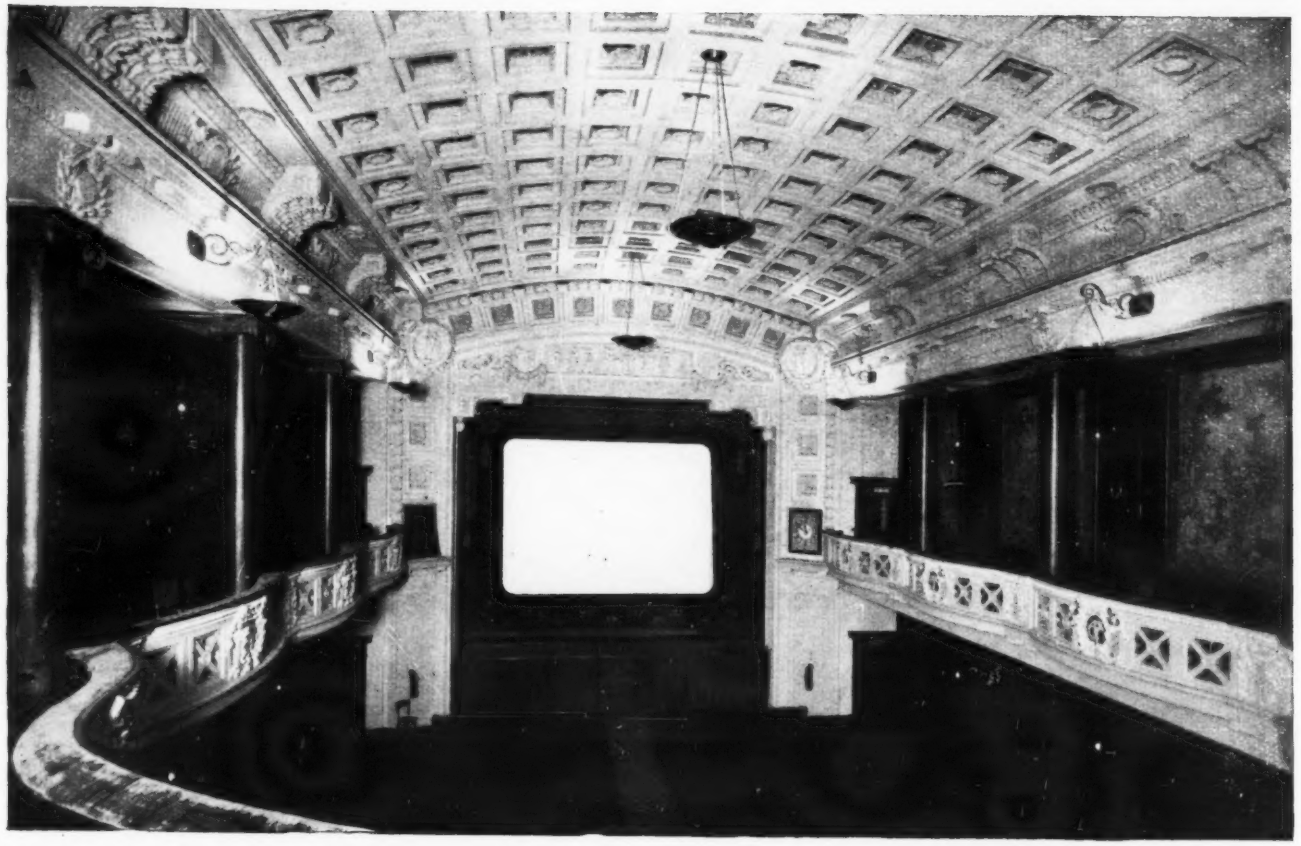


EDINBURGH PICTURE HOUSE: DETAIL OF SCREEN IN VESTIBULE.

Mr. Robert Atkinson and the late Captain G. L. Alexander, Architects.

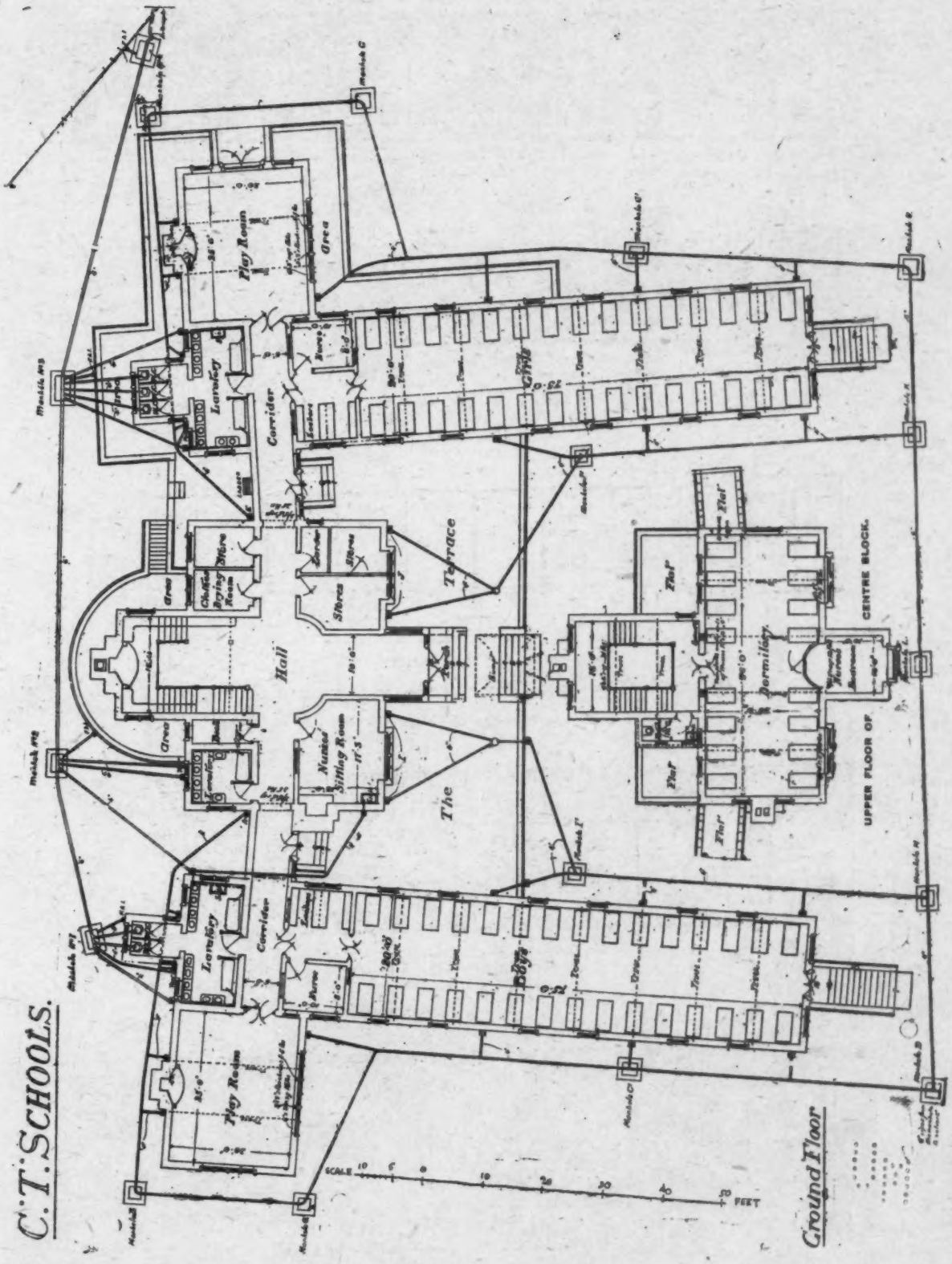
EDINBURGH PICTURE HOUSE: ENTRANCE.

MR. ROBERT ATKINSON AND THE LATE CAPTAIN G. L. ALEXANDER, ARCHITECTS.



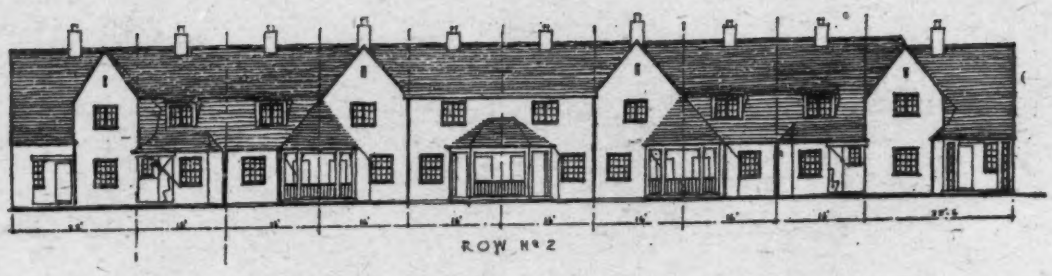
EDINBURGH PICTURE HOUSE, PRINCES STREET, EDINBURGH.

MR. ROBERT ATKINSON AND THE LATE CAPTAIN G. L. ALEXANDER, ARCHITECTS.

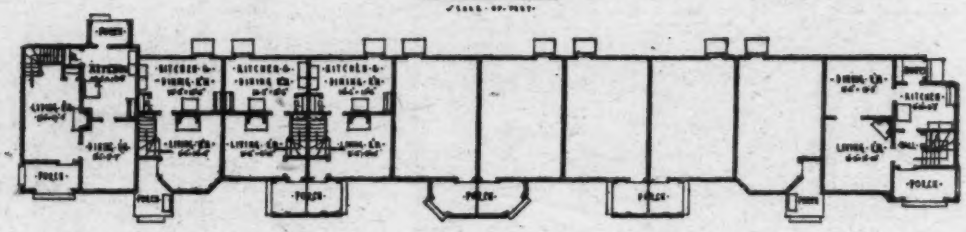


ROYAL COMMERCIAL TRAVELLERS' SCHOOLS, HATCH END, PINNER: NEW DORMITORY BUILDINGS.

MR. THOMAS BATTERBURY, ARCHITECT.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

ROW Nº 2 ONE SIX ROOM HOUSE, EIGHT FOUR ROOM HOUSES & ONE FIVE ROOM HOUSE

Plans and Elevation of House Row No. 2

Typical Elevations of Street Fronts and House Rows

FROM THE AMERICAN INSTITUTE OF ARCHITECTS' "JOURNAL."

COTTAGES, WAR EMERGENCY VILLAGE, HILTON.—MR. FRANCIS Y. JOANNES, ARCHITECT.

A NATIONAL ARCHITECTURE.—II.

By W. R. LETHABY.

THE ART OF CONSTRUCTION.

A RECOGNITION that we really agree that construction is the centre of our art is a necessary preliminary to any possibility of advance. Without some agreement we are all individual particles lacking the impulse of a common movement. The midrib of architecture, or rather its very body, throughout the ages has been a developing construction, the rest is of the nature of clothing and embroidery—often very delightful, but not essential architecture. "The body is more than raiment." By construction, of course, should be understood the knowledge of the functions of structures as well as of the art of erecting them. But a thing and its function are practically one.

The first business of an architect is to build well, and to aim at perfect functional fitness. Probably we should all agree on this, and further that at this time the architect should be scientifically trained. In this age of books, the possibility of attaining the wonderful instinctive power and insight of the practical man of former generations seems to have passed by. Some, however, will say "Yes, power in construction and scientific training are necessary, but they are not all." Again we can probably agree on this third proposition, in this negative form. If any further point can be brought forward on which we can agree let us accept it. I am all for tabling our agreements, but doubt if it is possible to agree generally on much more at the present time. There have been other factors in the past, and there will always be differences of gift. Some will always give something over and above by "a kind of felicity," but I doubt whether it can be put into a bond. There are and will be diversities of skill and personal preferences: all the world and all the past remain for our admiration and admonition.

I have heard it objected that most of our work is so simple—the building of average houses and the like—that it does not require high constructive skill. This misses the point. A highly developed constructive sense is required to form the very temper which will set about any building problem, and there is certainly room for it in the reform of these very average houses. A constructive sense would soon produce disgust for the crudity of the damp, draughty, ill-lighted, cold and cracked houses we live in. What an architecture of taste has produced an architecture of sense would cure. "Ah but," it is said, "there are things like monuments, you know: how would you design a handsome monument without, &c.?" There are fringes to every question, but I cannot think that even the humblest tablet would not be bettered by the *constructive sense*, which necessarily includes an appreciation of materials—if not, leave it to the upholsterer firms who are becoming such experts in "period design."

Intelligent constructors considering the cottage problem, the dwelling house problem, and the shop problem should be able in twenty years to give us satisfactory solutions. Such solutions, however, can only be arrived at by a process of continuous development directed by those who are keenly interested in the questions. Weights and stability are largely negligible in such problems as these, but constructive skill is not only concerned with the mechanics of stresses. Proper appreciation of balance and weight are everywhere essential: the scientific approach simplifies complexity, gives order for untidiness and substitutes economy for waste. Only one having the constructive instinct may see the large number of comparatively paltry factors of house organisation in due relation. Convenient arrangement, simplicity of roofing, ample lighting, well distributed pipes should all be seen as in the very constitution of a house—its organic system.

The house designer has to bring these factors and dozens of others into working relations, and to eliminate vulnerable points; the various factors have to be taken in their right order of importance and the economical has to be made efficient. The problem is very much like that with which the designer of a ship deals. A love of right solutions, a hatred of bungling, a passion for making perfect must become instinctive. The centre of gravity of our art is construction, but there has been a curious inversion in our use of the word. Construction we are likely to think of as "science," while knowledge of styles is classed as art. Both, however, are science so far as they are matters of record, theory, and scholarship. In fact much of what passes for the art of architecture is mere history, a science of historical precedents—the case law of architecture. Both are art only so far as they are active and experimental. Art is science in operation, and much science is research preliminary to art.* Construction for service is a noble art and the essential function of an architect is to rear structures, fit, sound and masterly. Moreover, every such vital activity has a soul of poetry—the plough, the crane, the signal-box, the tug-boat have that about them which is human and deep, but one might as well expect poetry of a top-hat as of a fashionable piece of architecture—poetry and snobbery are polar opposites. We shall never see the problems of structure simply and whole while we see them through the refractive media of styles. It is irritating even to have to mention the style superstition: and almost as absurd as to have to argue with some who might prefer to design by spookery—by the way, I do believe it would pay for some architect of the æsthetic school to profess to have his designs revealed. The mysteries of style, proportion, correct taste and aesthetic appreciation are not far from the "borderland."

We readily accept the absurdities of our time while we may be startled by similar things which have gone out of fashion or by extensions. Thus we still accept "Gothic" or "Renaissance" designing as all in the same day's work: in a book of 1856 I find a reference to "Mr. H. Eginton, the Elizabethan architect," but we have not yet arrived at having Egyptian architects at Conduit-street.

There seems to have been three main types of building construction developed in relation to the use of timber, stone, or clay. These modes may be put under A. B. C.:

Articulation	in Carpentry.
Blockage	in Masonry
Concretion	in Mud, Rubble or Brick.

To these modern metal-work practice adds the plate, the mesh, corrugations, &c. All the possibilities of combination, the general mechanics of construction and conditions of stability are matters of the greatest interest and might be made quite exciting and even romantic. We badly need more sympathetic books on these matters, which will rouse the spirit of construction and lead on to daring and adventure.

* In a Statute of Wages, 1633, I find "For the work and art of his science"; and, "any of the same sciences, crafts, arts or mysteries."

THE CONDITION OF MAXIMUM USE.

Any commonsense principle firmly held and patiently pursued would furnish a clue in the architectural maze. Even agreeing with our seeming enemy *economy* would go far to open a path to progress. Efficiency with economy would be as good a guiding maxim as any, for in truth the essence of economy is not mean saving, it is rather a maximum of service. Reverence for material and labour are involved in a right sense of economy. There is nothing so extravagant as the meanly cheap, which tends to bring civilization down to a picture-post-card and cinema level. If the houses we actually live in and our own daily customs are reconsidered from the point of view of service, it should convince anyone that a heightening of moral would come from weeding out waste.* Again, untidiness is another name for this same enemy, inefficiency—dirty corners, loose ends, smoke, paper litter, hitched-up telegraph wires, advertisement-smothered railway stations: and to aim at getting rid of these is a necessary part of our architectual ambitions.

Notwithstanding the interest of modern engineering as a structural art, it must be said that English engineering has been fully as unsatisfactory as our architecture. Service seems to be considered less than quick "profit," it lacks reverence or even care, and since the early days of railways when Brunel showed some sense of decency, it has run lower and lower as an instrument of exploitation and dividend hunting. The older professions have had some care in attempting to maintain a standard of fitness, but the vulgar cynicism with which our once beautiful towns were tied up by lines and the most pleasant outskirts swallowed up for truck shuntings passes all belief. The crudity of thought and rudeness of construction, the meanness and often helplessness of it all is not economy, it is catch-penny vulgarity. Our engineers seem to have been ready to hire themselves out for any triviality or violence: it may be much the same on the Continent, but, if so, it is better done and not so much in evidence. On the other hand it may be said that some of the engineering part of the new Waterloo Station is better than we are accustomed to, and this may give us hope of better things. Any reasonable type of construction includes some care for finish. Construction is a serious and virile thing: it not only holds traditions which have been developed from the earliest days when men began to build, but it enshrines mysteries of the nature of things. "Design," on the other hand, is often the vulgarity of mere caprice, trivialities and affectation or ostentation.

"We are lovers of beauty with economy," said Pericles, of the Athenians. This economy as one recent scholar says, "is visible in every detail down to the arrangements made for selling the scaffolding. Every item was discussed and rigidly controlled."

* See "The Elimination of Waste": Prof. H. J. Spooner. 1918.

A Building Puzzle.

One of the puzzles of building was brought before the Antiquarians during their visit to the Church of St. Mary, Beverley the other day, as this church contains one of the proofs in stone of the gap caused in building operations by the black death in England. The Scarborough *Mercury* notes that there is a point where the original builders were stopped, and then came a gap of thirty years owing to the shortage of workmen.

DATA FOR COTTAGE BUILDING.

SOME time ago, at the request of the Committee of the Privy Council on Scientific and Industrial Research, the Council of the Society of Architects submitted to that body a programme of its proposals for research into the question of the greater utilisation of local materials in building construction. While this programme was under consideration by the Committee, the housing question became more acute, particularly in regard to the supply of cottages, and the Society was asked for the time being to concentrate its efforts on obtaining certain data from its members, instead of proceeding with the more elaborate scheme referred to.

The co-operation of the members of the Society is invited in the columns of its journal in supplying data as to local methods and building materials adopted and used in various parts of the country in connection with the erection and design of cottages, together with information as to the possibility of combining standardized structural units with local materials, and finding suitable artificial substitutes for such building materials as it is difficult or impossible to obtain at the present time, and which are likely to be scarce for some time after the end of the war.

The object in view is the effecting of economy in the construction and erection of dwellings and the eliminating so far as possible of transport and other difficulties which might hinder production.

The following may be given as examples of the data required :—

(*a*) Traditional methods of using and bedding pan tiles or small waste slates, or other roofing materials, which may have proved thoroughly reliable.

(*b*) Methods of building walls with thin bedded stone such as slate or flag stones, with rubble, such as granite, rag stone, whinstone, &c.

(*c*) Methods of using local waste materials for any of the purposes required in cottage building.

(*d*) Particulars of any porous stones, or stones liable to sweating, and any local methods of avoiding the difficulties to which they give rise.

(*e*) Methods of mixing and using local limes and cements which have proved valuable and reliable for any purpose.

(*f*) Local materials other than sand, which have proved valuable as aggregates for mortar.

(*g*) Methods of using combinations of materials :—Brick and stone, brick and flints, rubble with concrete dressings, &c.

(*h*) Methods of using new materials or new methods of using old materials, likely to prove valuable either locally or generally for cottage building.

It will be convenient if the information in reference to any matter can contain the following particulars and be given under the following headings :—

(1) Exact description of the material, or the method of using a material, or both, as the case may require.

(2) Locality where the material is found or where the method is employed.

(3) The experience on the strength of which the reliability of the material or method recommended is based.

(4) Any suggestions as to the extended or as to new uses of the material or method in question.

(5) Pre-war cost of material or method, when known.

(6) Any other information or observations.

It is requested that this information be sent to the Secretary not later than October 31, and that members who may not at the moment be able to give the information, but are desirous of co-operating with the Society, should communicate their views on the subject to the Secretary. The reasonable out-of-pocket expenses incurred by members in obtaining the data will be refunded by the Society, provided the cost does not exceed in any individual case an amount to be previously sanctioned by the Council of the Society.

NOTES FROM THE FOREIGN PRESS.

HOUSES OF LIGNO-CONCRETE.

THE present need for small dwelling-houses (says *Beton und Eisen* for August 5) can hardly be met without cheapening their construction. A new invention in the field of economy is ligno-concrete. The wood used may be of otherwise little or no building value, such as small, peeled, unseasoned, round pieces. These must be completely buried in the concrete. For the latter, cheap materials such as blast-furnace slag and cinders, may be used. Moreover, most of the work can be executed by unskilled workmen. The shrinking of the wood favours the circulation of air, which tends to preserve the wood. Both the inner partition-walls and the roof are constructed in this way ; but for the latter, small-meshed wire netting, nailed on the under-side, is used, and the concrete is made somewhat stronger. Houses so constructed are clean and healthy, warm in winter, and cool in summer. They may be recommended as dwellings for agricultural labourers. A specimen cottage, built by Ph. Gelius, architect to the Local Commission at Munich, has been approved by the authorities.

MEMORIAL TABLET TO MAJOR H. PHILLIPS FLETCHER, D.S.O.

THIS mural tablet in bronze has been designed by Mr. Banister Fletcher, F.R.I.B.A., in memory of his brother and partner, the late Major H. Phillips Fletcher, D.S.O., Croix de Guerre, F.R.I.B.A., F.S.I., A.M.Inst.C.E. It measures 2 ft. 6 ins. by 1 ft. 6 ins. and consists of a simple inscription surmounted by a laurel wreath in which are worked the D.S.O. and Croix de Guerre heraldic devices, and the Major's coat of arms, enclosing the bust of the late Major executed by his friend, Mr. Charles L. Hartwell, A.R.A. ; while in the spandrels beneath are the devices of the Middlesex Hussars and the Royal Flying Corps. The tablet, which was executed by Mr. A. Broadbent, was exhibited last year in the Royal Academy.

HERBERT PHILLIPS FLETCHER · D.S.O.
CROIX DE GUERRE · MAJOR MIDDX. HUSSARS
& ROYAL FLYING CORPS · F.R.I.B.A. · F.S.I. · A.M.I.C.E.
BARRISTER-AT-LAW OF THE MIDDLE TEMPLE
ARCHITECT · SURVEYOR · ENGINEER
27 FEB. 1872 – 3 AUG. 1916

Photo : Bedford Lemere.

Memorial Tablet to Major Phillips Fletcher, D.S.O.
By MR. BANISTER FLETCHER, F.R.I.B.A.

WHAT CONSTITUTES UNPROFESSIONAL PRACTICE IN ARCHITECTURE.

A recent number of the *American Architect* contains an interesting leading article under this title. The writer states that "The American Institute of Architects for the past fifty years has been formulating new codes of ethics and trying to define professionalism, but always the point of view has been backward, applying to the future only the proven experiences of the past." The writer proceeds to formulate a negative code of ethics :

1. It is not unprofessional to solicit work.
2. It is not unprofessional to advertise.
3. It is not unprofessional to guarantee results.
4. It is not unprofessional for an architect to assume the capacity of a master builder.
5. It is not unprofessional to compete.

The article should be read to appreciate the direct "dog" sense of the clear-thinking, unconventional American mind, and the simple conclusions arrived at are epitomised in four brief injunctions which comprise the duty of man towards man, and which are applicable not only to architectural practice, but to every other calling. He writes :

"Now, why is it not possible to formulate a positive code of ethics something like this ?—

1. Do unto others as you would have them do unto you.
2. Be a self-respecting gentleman in every act of life.
3. Be a conscientious, faithful business man in all your dealings with clients, builders and associates.
4. Give everybody a square deal.

"What more is there to say ? The architect who conscientiously carries out the foregoing can solicit work, advertise, guarantee his contracts, act as a builder, finance an operation if he has the means and ability, roll up his sleeves, and go into competition of any sort, sell his services for cash or its equivalent just because he likes the job, and yet be self-respecting, professional and square with the world and all about him. Is it not about time that we admitted that is just what we are doing now, that these four comprise the duty of man towards man, and these duties are no more specialized in the case of architecture than they are in any other calling, and that professionalism after all is fundamentally the golden rule and a square deal ?

"The fundamental essential of the practice of architecture is to get a job, and to get a job one must have friends or acquaintances or business connections who are willing to take a chance on an untried quantity if the architect is just beginning ; or at any rate, a certain amount of uncertainty is involved even when the older and more experienced architects get their chance ; and right there the difficulty begins."

EXHIBITIONS OF THE WEEK.

THE autumn exhibition of the International Society of Sculptors, Painters and Gravers opened last Saturday at the Grosvenor Gallery. Without showing any features of exceptional novelty, this exhibition of the Society kept up its level of interest, which centres in the paintings of the Large Gallery, where, as in the last exhibition, the portrait work of Ambrose McEvoy attracted much attention.

Though there is little among this quite so fascinating in colour as his "Mme. de Gandarillas and Her Children" of last spring, Mr. McEvoy comes very near it in his "Lady Lytton," where the colour scheme is most daring—the tomato-rose colour of the dress contrasting felicitously with the green and thin band of very telling black, while the lighting of the face is most delicate and happy. The whole effect here suggests that he has aimed at something very brilliant, and nearly—but not quite—achieved it. We do not feel this in his portrait of "Miss Henry," where the pose is stiff, unpleasing, and the right arm shows absolutely bad drawing ; while his "Hon. Mrs. Montagu" is too unfinished to be fairly criticised. One might, in fact, say that McEvoy, the brilliant portraitist of society ladies, is really at his best when painting men. Here there are no tricks, no arms waved in air, like those here of the beautiful Lady Diana Manners. His "Major-General E. Strickland" is careful and serious portraiture ; and witness, too, the rugged strength of his "Augustine Birrell," or his black-and-white study of "Mr. Lloyd George." This head and shoulders of the Prime Minister is a brilliant bit of impressionist drawing. Nothing could exceed its facility and freedom. The grey paper showing through gives the half tones ; while the high lights of the face are got with white chalk, and the background boldly hatched in with great streaks of lamp black.

One of the finest portraits in the Large Room, even better than his "Italian Soldier," is Glyn Philpot's "Boy with a Spear." Here all is reserved, quiet in tone, but full of rich suggestion. We think instinctively of the great past Masters, of Velasquez, or such a Venetian as Morone—just as in Meredith Frampton's marvellous profile head here of a woman in the clean, cold outline, the faultless drawing of the left ear, such an Italian Primitive as the great Piero della Francesca comes into our thought. Barnard Lintott—whose work in water-colour, exhibited last Saturday at the Leicester Galleries, we shall treat in detail later—has here an oil landscape of Sussex, near the work of Lamorna Birch. Charles Sims and Alfred Withers have charming scenes of wooded pools ; and Tom Robertson, a nocturne, the "Chateau de Barbe Bleue," full of poetic beauty. The presence of certain Belgian artists —of Edgar Tijtgat, of Carpmael and Proost, is to be noted ; but in an International Society where is the art of our other Allies—of France, of modern Italy, of America ?

Lastly, the Private Gallery is this year devoted to three artists—Frances Hodgkins, Nelson Dawson and A. J. Munnings. These two last deal effectively with war subjects—Nelson Dawson showing the work of our Fleet in the Channel and North Sea ; while Mr. Munnings, whose love of horses and English country life is evident, has a clever work painted with the Canadian Cavalry in France.

Last Saturday, at the Leicester Galleries, was opened an exhibition of the water-colour work of Barnard Lintott—varying in subject from peaceful rural Sussex to Petrograd under her Bolshevik masters—which shows considerable merit and which we hope to treat in a later notice.

THE FUTURE OF ARCHITECTURE.

WE think the following, from the current issue of the Society of Architects' *Journal*, deserves prominence :—

"It would seem from some of the questions put to the witnesses who have given evidence before the R.I.B.A. Committee, that the Committee had already come to the following conclusions and merely invited opinions as to procedure :—

That the profession is in an unsatisfactory state, and that remedial measures are necessary.

That there are certain minimum essential acquirements for ordinary general practice, and that architectural education should be modified to meet these.

That the R.I.B.A. should be reorganised.

That the profession is not unified.

That there are unqualified practitioners who bring the profession into disrepute, and that they should be prevented from doing so.

That architects should acquire technical and special knowledge and that their education should be improved for this purpose, and that there should be some relationship between architects and technical experts.

That the public are inclined to employ builders in preference to architects.

The Committee appears to have an open mind on the following subjects :—

(*a*) Whether an attempt should be made to unify the profession, and, if so, in what manner and to what extent.

(*b*) Whether architects should undertake building operations directly.

(*c*) What should be the relations of the profession to the State and to municipal and public departments generally.

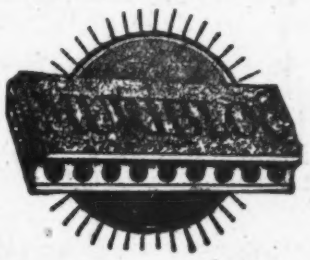
If any report of the evidence is to be published, its weight and value will materially depend, in our opinion, on the discrimination shown in selecting witnesses and as to whether any published evidence is in the nature of considered opinions or merely relates to questions put to them in Committee.

We have in mind the fact that most of the published questions are in the nature of problems requiring time for thought on the part of any responsible witness before committing himself to any definite opinion or proposal."

NOW READY.
REINFORCED CONCRETE:
THEORY AND PRACTICE.
By FREDERICK RINGS, M.S.A.
SECOND REVISED and ENLARGED EDITION
10/6 nett. Postage 6d.
"THE BUILDER" Office, 4, Catherine Street, Aldwych, W.C.2.

TILES For WALLS, FLOORS, FIRE-PLACES, MARBLE & CERAMIC MOSAIC, TERRAZZO, Etc., supplied and fixed complete.
LONDON STOCKS FOR IMMEDIATE DELIVERY.
COPE & CO., Tile Merchants,
LONDON OFFICE—5, BURY STREET, NEW OXFORD ST., LONDON, W.C.
Telephone No.: Museum 573. Manager: JAMES COPE.

CONCRETE PARTITION and BUILDING SLABS.
REINFORCED LINTOLS, Etc.
Special Forms or Blocks Manufactured on Shortest Notice.
OUR STANDARD SLABS ARE MADE IN SIX THICKNESSES.
MURIBLOC (PARTITION SLABS), LTD.



MACHINE MIXING ONLY.
BRITISH PORTLAND CEMENT AND CLEAN HARD BURNT CLINKER.
WEIGHT-TAKING. FIRE-RESISTING. VERMIN PROOF.
Telephone: Battersea 1312.
Telegrams: "Muribloc, Wandsworth."
Registered Offices and Works: Prince's Wharf, WANDSWORTH.

THE BUILDING TRADE.

THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY.—II.

ANOTHER object is to consider, discuss and formulate opinion upon any proposals which offer to those engaged in the industry the means of attaining improved conditions and a higher standard of life; and involve the enlistment of their active and continuous co-operation in the development of the industry, and to make recommendations thereon, including such questions as measures for—

1. Regularising production and employment.
2. The provision of a graduated scale of minimum rates designed to maintain *real* wages as nearly as possible on a level throughout the country.
3. Minimising the fluctuations of trade by intelligent anticipation and the augmentation of demand in slack periods.
4. Scientific management and reduction of costs.
5. Welfare methods.
6. Closer association between commercial and aesthetic requirements.
7. The inclusion of all employers and workpeople in their respective associations.
8. The revision and improvement of existing machinery for the settlement of differences between different sections of the industry, or for the provision of such machinery where non-existent, with the object of securing the speedy settlement of difficulties.
9. The better utilisation of the practical knowledge and experience of those engaged in the industry.
10. Securing to the workpeople a greater share in and responsibility for the determination and observance of the conditions under which their work is carried on.
11. The settlement of the general principles governing the conditions of employment, including the methods of fixing, paying, and readjusting wages, having regard to the need for securing to all engaged in the industry a share in the increased prosperity of the industry.
12. Ensuring to the workpeople the greatest possible security of earnings and employment.
13. Dealing with the many difficulties which arise with regard to the method and amount of payment apart from the fixing of general standard rates.

It is proposed to offer some observations in regard to some of the questions mentioned in the list.

Regularising Production and Employment.

This is a big question, and has a number of aspects according to the direction from which it is approached. To begin with the general or world aspect: Nature does not produce regularly, seasons vary and crops yield sometimes poorly sometimes abundantly; earthquakes, storms and floods occur erratically, and often have catastrophic results in loss of life and destruction of ships and property; great fires occur and destroy harvests, or valuable forests, or even cities; pestilences and famines arise and sweep away multitudes of people. So that, leaving the ravages and losses of war out of the reckoning, there are ample natural reasons why the demand for goods and services and supplies of natural products fluctuates so that the course of production is diagrammatically represented by a zig-zag line and the course of employment by another such line. The high and low points of those lines do not necessarily coincide, the production high and low points usually following the employment high and low points in order of time. So far, it has not been found practicable to prevent these fluctuations, although they can be to some extent foreseen and measures taken to provide against them.

Turning now to the partial or national aspect, this country is happily itself as free as most from catastrophes, though even here we have great storms, fires, explosions and the like; but, owing to the world-wide nature of our trade and commerce, we are bound to feel the effects of all fluctuations of production wherever they occur, and they have their repercussion through our foreign trade upon even such exclusively home trades as the building industry.

This brings us to the particular or industrial aspect; and it is evident from what has gone before that some industries, cotton, for instance, will be very directly and promptly affected by a famine in India or floods in China, and that where an industry is concentrated in a district, as the cotton industry is concentrated in Lancashire, the secondary effects of a famine in India may react noticeably upon the building industry in that district, in the shape of a check on demand for mill-building, but may not produce any measurable effect in other districts; so that within the home market there may be partial fluctuations affecting particular districts, or, if there is a general depression of trade, the whole of the home market may be affected.

Then, again, an industry may be specially affected as the result of legislative changes, such as happened to the building industry consequent upon the passing of the Finance Act of 1909-10. It must be admitted, therefore, that the effective regularisation of production and employment means that by some means, fluctuations of demand must be neutralised in some way because they cannot at present be prevented where they result from natural causes.

Neutralisation may be sought in various ways: for instance, the national insurance against unemployment is an attempt in that direction by levying a tax on the whole of the industry, employers and workmen, to provide a subsidy for the latter when out of work. It has the demerit of keeping him alive, but not keeping him fit; therefore, the unemployed man has to train on again when he is able to get work.

Another method of neutralisation is to control the amount of work offering in periods of high demand and to require the less important work to be held over until a slack period.

We shall, doubtless, see a good deal of this kind of neutralisation in process during the period immediately after the war, and the experience will be valuable if the control is well managed. There is also a natural tendency towards the postponement of work not of a pressing nature when demand is high, because prices are also high. This was observable prior to the war in the case of speculative building, which was generally not very busy when the rest of the building trade was most active, but became so when prices were low owing to slack demand, and houses could therefore be built cheaply. Another way was practised under the guild system of the Middle Ages, viz., by restricting the number of men in the industry. Without going as far in that direction as the guilds did, it might be well to consider the desirability of requiring those who wish to practise an industry to satisfy a trade test. Something is done by the trade unions in that direction, but hardly in the best manner.

The greatest example of neutralisation is to be found in the substitution and dilution of labour which has taken place during the war. This has enabled great things to be done in the way of producing munitions of war, but it has also prevented much unemployment, and careful and unprejudiced consideration might show that in that direction lies the best chance of regularising production and unemployment.

In effect, dilution and substitution have vastly increased the mobility of labour. Prior to the war it was recognised that to increase the mobility of labour was a way to prevent unemployment, and that led to the establishment of labour exchanges. But mobility of labour was construed in the narrow sense of a man following always the same handicraft, though moving readily to where there was a better demand for his particular capabilities; there is, however, a broader sense in which mobility of labour means readiness to move from one handicraft to another, and the war experience in that direction shows that there are undreamed of possibilities in the direction of this broader interpretation.

The danger is that the question may suffer from prejudice and not get fair consideration in some quarters. The only way to handle it satisfactorily will be to go to the root of the prejudice and convince those who entertain that feeling that it is possible to eliminate the fears upon which the prejudice probably is founded. The whole experience, military and civil, of this war shows that men and women can be taken from their habitual occupations, and, after a short, intensive training, be put to entirely different work with satisfactory results; and if that can be done in the hurry and scurry of a great struggle and with improvised methods of training and utilising the trained persons, it is not unreasonable to suppose that with carefully thought out methods and a continuous practice of training people to pass readily from one kind of occupation to another, together with a scientific system of foreseeing trade fluctuations, much might be done to so prepare the workers that when trade depression comes to any particular industry the labour thrown out of employment could be transferred temporarily to other industries capable of absorbing it. If this were done on a national scale, each industry would, in course of time, fall under the obligation of accepting the help of other industries in dealing with its own unemployment, and mutual obligation should entail mutual willingness to set aside craft prejudices. If the much-to-be-desired League of Nations becomes an accomplished fact, international machinery might be devised to render similar mutual help in times of severe trade depression.

WORKMEN'S COMPENSATION: ILLEGAL CONTRACTS.

IN our issue of January 18, we commented strongly on the principle disclosed in the case Pounteney *v.* Turton, which compelled the Court of Appeal to deprive a child of compensation under the Workmen's Compensation Act, because his employment was illegal, he being employed in contravention of the Children's Act, that principle being that in such a case he was not employed under a "contract of service" within the meaning of the Workmen's Compensation Act.

We probably were not alone in drawing attention to this defect in the legislation, for on May 18 a short Act was passed to remedy the hardship disclosed by this case. This Act, the Workmen's Compensation (Illegal Employment) Act, 1918, provides that if in proceedings under the principal Act it appears to the arbitrator that the contract of service or apprenticeship is illegal, he may, if having regard to all the circumstances of the case, he thinks it proper to do so, deal with the matter as if the injured person had been working under a valid contract of service or apprenticeship.

The case which disclosed this hardship was only heard in November, and it is to the credit of Parliament that in war time so small a matter should so promptly have been redressed.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Accrington	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Altrincham	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1§	1/1½§
Ashton-under-Lyne	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1½§	1/1½§
Barnsley	1/3§	1/2	1/1½§	1/-	1/1½§	1/1	11	11	11	11
Barrow-in-Furness	1/3½	1/4	1/4	1/3½	1/3½	1/3½	1/3½	1/1	1/1	1/1
Barry	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Bath	1/1	1/1	1/1	1/0½	10/½	1/1	1/-	10½	10½	10½
Bedford	1/1	1/1	1/1	1/1	1/1	1/1	10	10	10	10
Birkenhead	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1 2½§	1/2½§
Birmingham	1/4	1/4	1/4	1/4	1/3½	1/4	1/3§	1/1	1/1	1/1
Bishop Auckland	1/2½	1/2½	1/4	1/2½	1/2½	1/4½	11	11	11	11
Blackburn	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Blackpool	1/-	1/2	1/2	10½	8½	1/-	10½	8	8	8
Bolton	1/5§	1/5§	1/5§	1/4§	1/3§	1/6§	1/5§	1/-§	1/-§	1/1§
Bournemouth	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Bradford	1/3½	1/3½	1/3	1/2½	1/2½	1/3	1/1	1/1	1/1	1/1
Bridgwater	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Brighton	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11	11	11
Bristol	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Burnley	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Burton-on-Trent	1/1	1/1	1/1	1/1	1/1	1/1	1/0½	10½	10½	10½
Bury	1/5§	1/5§	1/5§	1/3	1/3½§	1/6§	1/5§	1/-§	1/0½§	1/0½§
Cambridge	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	10½	10½	10½
Cardiff	1/3	1/3	1/3	1/3	1/3	1/3½	1/2	1/-	1/-	1/-
Chatham	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Chelmsford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11	11	11	11
Cheltenham	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	10½	10½	10½
Chester	1/3§	1/3§	1/3§	1/3§	1/3§	1/3§	1/2§	1/-§	1/-§	1/-§
Chesterfield	1/-	1/2	1/1	11	10	11	1/-	8-8½	8-8½	8-8½
Colchester	11	11½	11½	1/-	11	1/-	9½	8½	8½	8½
Coventry	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/0½	1/0½	1/1
Crewe	1/0½	1/0½	1/0½	1/0½	1/0½	1/2	1/0½	8	8	8
Darlington	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/0½	1/0½	1/0½
Derby	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11½
Doncaster	1/-	1/1	1/1	10½	10½	10	9½	10½	10½	10½
Dudley	1/2	1/2	1/2	1/2	1/2	1/3	1/1	11	11	11½
Durham	1/2	1/2	1/1½	1/2	1/1½	1/10	1/0½	9	9	9
East Glam. and Mon. Valleys	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Exeter	1/-	1/-	1/-	1/-	1/-	1/0½	11	10	10	10
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/2½	1/2½	1/2½	1/2§	1/2§	1/2½	1/2½	1/-§	1/-§	1/-§
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Guildford	1/1	1/-	1/-	1/1	—	1/1	11½	9½	9½	10
Halifax	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1	11§	11½	11½
Harrogate	1/0½	1/0½	1/-	1/-	1/-	1/2	1/-	10	10	10
Hartlepools	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Hastings	10	10	10	10	10	10	9	7½	7½	7½
Hereford	11½	11½	11½	11½	11½	11½	10½	9½	9½	9½
Huddersfield	1/3½	1/3½	1/5§	1/1	1/1	1/2	11	11½	11½	11½
Hull	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/3½	1/2§	1/2§	1/2§
Ipswich	1/1½	1/1½	1/1½	1/2	1/2	1/2½	1/0	11	11	11
Lancaster	1/1½	1/1½	1/2	1/1½	1/1½	1/-	1/1½	11	11	11
Leamington Spa	11½	11½	11½	11½	11½	11½	10½	8½	8½	8½
Leeds	1/3½	1/3½	1/3	1/3	1/3½	1/3	1/0½	1/0½	1/0½	1/1
Leicester	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	1/-
Lincoln	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10	10½
Liverpool	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1/2½§	1/2½§
Llanelly	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
London	1/5	1/5	1/5	1/5	—	1/5½	1/2½	1/1½	1/1½	1/1½
Loughborough	1/3½§	1/2½§	1/1½§	1/3½§	1/3½§	1/1½§	11§	1/0½§	11½§	1/0½§
Luton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	11	11	11
Maidstone	11	11	1/1	10	10	11	1/-	10	10	10
Manchester	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1½§	1/1½§
Mansfield	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½
Merthyr Tydfil	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Middlesbrough	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Newcastle-on-Tyne	1/3½	1/3½	1/3½	1/3½	1/2	1/3	1/4§	1/0½	1/0½	1/0½
Newport, Mon.	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Northampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Norwich	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3½	1/1	1/0½	1/0½	1/0½
Oldham	1/5	1/5	1/5§	1/5§	1/4	1/4	1/5§	1/1½§	1/1½§	1/2§
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	1/2	1/2	1/2	1/2	1/2	1/2	11¶	11	11	11
Pontypridd	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/4½	1/4½	1/4	1/3½	1/3	1/3½	1/2½	1/0½	1/0½	1/0½
Reading	1/1	1/1	1/1	1/1½	1/2	1/1	11½	11	10½	10½
Rochdale	1/5§	1/5§	1/5§	1/4½§	1/3	1/6§	1/5§	1/1½§	1/1½§	1/2§
Rochester	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Rugby	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	11½
St. Albans	1/-	1/-	1/2	1/-	1/-	1/-	10½	9	9	9
St. Helen's	1/6	1/6	1/6	1/6	1/6	1/5	1/3	11½	11½	11½
Scarborough	1/1	1/1	1/1	1/1	1/1	1/-	11½	10	10	10
Sheffield	1/3½	1/3½	1/3½	1/3	1/3	—	1/1½	1/0½	1/0½	1/0½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	1/4	1/3	1/5	1/4	1/4	1/4	1/4	1/-	1/-	1/-
South Shields	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/4§	1/0½	1/0½	1/0½
Stockport	1/5§	1/5§	1/5§	1/4§	1/4½§	1/6§	1/5§	1/1	1/1	1/1
Stockton-on-Tees	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Stoke-on-Trent	1/0½	1/0½	1/0½	1/0½	1/0½	1/-	11½	10	10	10
Stroud	11½	11½	11½	11½	11½	11½	11	9½	9½	9½
Sunderland	1/3½	1/3½	1/3½	1/3½	1/2	1/1½	1/4§	1/0½	1/0½	1/0½
Swansea	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Taunton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	11§	9½§	9½§	9½§
Torquay	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Wakefield	1/2½§	1/3§	1/2½§	1/2½§	1/2½§	1/2½§	1/1½§	10½	10½	10½
Walsall	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	11½
Warrington	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/4§	1/1½§	1/1½§	1/2§
West Bromwich	1/3½	1/3½	1/3½	1/4	1/3½	1/3	1/1½	1/0½	1/0½	1/0½
Wigan	1/4§	1/4§	1/4§	1/4§	1/3§	1/4§	1/5§	1/0½§	1/0½§	1/0½§
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11
Worcester	1/-	1/-	1 -	1/-	1/-	1/-	10	10½	10½	10½
York	1/2§	1/2§	1/2§	1/2§	1/-	1/-	10	11½§	11½§	11½§

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include all 12½ per cent. bonuses. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. increase granted by the Committee of Production to workers engaged on munition work.—ED.]

LONDON MASTER BUILDERS' AND AIRCRAFT INDUSTRIES' ASSOCIATION.

From the monthly letter for August and September of the Secretary of this Association, we take the following :—

Particulars of the decision of the Committee on Production in respect to the application from the National Federation of Building Trade Operatives were immediately circulated to all members, and, following precedent, a request from the operatives was made early in August that the terms of the award should be extended to all workmen engaged on general as well as munition work. . . . After long and careful discussion, it was resolved that the extension of the award should be made to the building trade. Members were immediately informed and their attention was called to the fact that this advance in wages was a further temporary war concession, in consequence of abnormal conditions. This fact has also been conveyed to the Operatives' Federation. The Government Departments which have been the principal cause of the existing unrest in most labour centres are at last recognising that there must be some finality to these constant increases in wages. At the recent hearing before the Committee on Production, the representative of a Government Department stated, *inter alia*, "Another thing I should like to say, if I may, as a general conclusion, is that we are now coming almost to the breaking point. I feel that we are coming to the breaking point so far as wages are concerned, and I think every Government Department feels the same thing. There are a great many jobs now hanging in the balance, and if wages go up very much more I feel sure they will shut down and there will be a severe cutting down of the building programme. I really think that by asking and continually agitating for excessive wages and allowances the workmen are ill-advised ; in fact they are killing the goose that lays the golden eggs."

Subsequent to the aforesaid decision came an application from the London District Committee of the National Union of Operative Heating and Domestic Engineers (known to members as the Smiths and Fitters), which is as follows : "That we approach the employers with a view of fixing a flat rate of 2s. per hour, merging all bonuses and awards into same. The abolition of all unnecessary overtime and the payment of an out-working allowance of 3s. 6d. per day when working away from home."

The London District Committee has been informed that the application cannot be entertained.

Printed copies of the Apprenticeship Indentures can now be obtained from the Secretary of the Divisional Office, Ministry of Labour, Employment Department, Martlett House, Bow-street W.C. 2. A number of boys are available for apprenticeship.

Members are reminded that the seventeen winter weeks will commence on Monday, October 28 next.

The following report has been received from Mr. H. W. Keeble, of Messrs. Keeble, Ltd. : "I regret to have to inform you that my brother Alfred E. Keeble, died of wounds in France on August 5. He was Capt. M.G.C., late Royal Fusiliers, forty-eight years of age, and senior partner and director of this firm."

TRADE NEWS.

The Directors of Bell's United Asbestos Co., Ltd., Southwark-street, London, S.E. 1, have declared an interim dividend on the Ordinary shares of 1s. per share less income tax (being at the rate of 10 per cent. per annum) on account of the profits for the current year.

Owing to the growth of their business as manufacturers of concrete machinery, Messrs. Winget, Ltd., have added a North of England office to their numerous branches at home and abroad. The address is 40, Albert-road, Middlesbrough, where the firm's late Secretary, Mr. Calvert Griffiths, acts as manager.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council: and P.C. for Parish Council.

ABINGDON.—The R.D.C. has passed plans of a new cottage at Wootton.

ATHLONE.—It is proposed to erect a new church, schools, and presbytery for the Parish of St. Peter, Athlone.

ATHY.—The U.D.C. has passed a scheme for the erection of 150 houses for men engaged at the Wolfhill Collieries.

BEDFORD.—The T.C. has approved of the plans for the erection of a boiler-house at the electricity station.

BOLTON.—Plans passed by T.C.: Addition to works, Pilkington-street, for Messrs. Henry Horrocks; loading way, Temple Works, for Messrs. T. Cross & Co., Ltd.; alterations, Imperial Hall, for the Y.M.C.A.; sanitary improvement, 62, Bella-street, for the Bolton Crucible Steel Co.; new streets, off Deane Church-lane, for the Dove Spinning Co.

BRAZIL.—A cable received from the British Consul at Sao Paulo states that tenders are invited for delivery next January, in connection with the proposed new port works at Paranagua in the State of Parana. Detailed information is being forwarded by the next mail.

CHESTERFIELD.—Plans passed by T.C.:—Fettling shop for the Bryan Donkin Co., Ltd., in Derby-road, and of stores and messrooms and alterations to offices for Messrs. Markham & Co., Ltd., at Broad Oak Works.

CORK.—The R.D.C. has decided that a new water main be laid from Monkstown to Glenbrook at a cost of £700.

COWDENBEATH.—An enquiry has been held into the application of the Corporation under a Provisional Order for the construction of additional waterworks.

DEWSBURY.—A hitch has occurred in connection with the proposal of the Corporation to convert the disused Whitley Hospital into an institution for the treatment of tuberculosis. The estimated cost of conversion is so high that the L.G.B. have asked for a full description of the proposed work and details as to furnishing.

DOONEES.—A co-operative creamery will shortly be erected at Doonees, near Mill-street, co. Cork.

DUDLEY.—Plans passed by T.C.: Additions to works, Saltwells, for the Earl of Dudley; offices and storeroom, Canal-street, Woodside, for the Harts Hill Iron Co.; additions to works, Porter-street, for Messrs. J. & A. Hillman, Ltd.; saw works and stabling, New-road, Netherton, for Mr. W. Deeley; sanitary improvements, Castle Hotel, Netherton, for Plants Brewery Co.; storeroom, Oaklywell-street, for Mr. W. Harden, Jun.

EAST GRINSTEAD.—The R.D.C. has adopted a report by its surveyor in regard to the provision of cottages after the war. It is suggested that 27 cottages should be provided for the Council's own workmen, but that the Council would build 36 and place the balance at the disposal of the County Council and its workmen.

GREENWICH.—Plan passed by B.C.:—Construction of drainage system at Deptford Dry Docks for Mr. H. Groves.

HAMMERSMITH.—Plans are before the Justices for alterations to the licensed house, "Young's Corner."

HORNSEY.—Plans passed by T.C.:—Conversion into more than one dwelling-house of Nos. 30 and 37, Queen's-avenue, Muswell Hill, No. 58, Avenue-road, No. 24, Crescent-road, and No. 70, Crouch Hall-road, Crouch End, and for a cinematograph operating chamber at the Athenæum, Muswell Hill.

HOUNSLOW.—A legacy of £2,000 has been left to St. Stephen's Church, Hounslow, for the erection of a tower, the money to be paid when the work is completed. As the tower will cost about double this sum, the church officials are not at present able to take advantage of the gift.

HULL.—Plans passed by Building Act Committee:—Hull Oil Manufacturing Co,. Ltd., for additions at Stoneferry; National Radiator Co., Ltd., additions, Perth-street; Brigham & Cowan, Ltd., erecting shop, Hedon-road; Pearce Bros., sheds, Abbey-street; G. Reed, Ltd., extensions, Southcoates-lane; A. & B. Smith, smoke-house, Gillett-street; Universal Oil Co., Ltd., fitters' shop, Stoneferry; A. & B. Smith, additions, Gillett-street; Needler's, Ltd., additions, Bournemouth-street; Hollis Bros., & Co., Ltd., shed, Craven-street; J. H. Fenwick, workshops, Pulman-street; Co-operative Wholesale Society, Ltd., alterations, Cumberland-street; Thos. Holmes & Sons, Ltd., additions, Providence-row.

ILKESTON.—Plans passed by T.C.: One story factory, Vernon-street, for Messrs. F. B. & V. Hunt; additions to St. Andrew's Parish Hall, North-street, for the Rev. C. Leeper. The T.C. has received a sketch plan of the proposed new post-office from the architect of H.M. Board of Works.

LISKEARD.—The clerk to the R.D.C. has reported that an inspector of the L.G.B has consulted with the Special Committee of the Council appointed to meet him *re* the housing question. Returns were produced showing that ninety workmen's dwellings were required in various parishes, and the inspector urged that the Council must get to work at once in making the preliminary arrangements.

MULLINGAR.—Plans have been prepared for the erection of a new convent for the Presentation Convent at Mullingar. The work will be undertaken as soon as the war is ended.

NEWCASTLE-ON-TYNE.—The memorial in Newcastle to the late Duke of Northumberland will be an orthopædic centre for disabled men. The scheme will probably cost £15,000, of which £6,000 has already been promised.

NOTTINGHAM.—A proposal is to be brought before the T.C. for the extension of the Guildhall in order to provide canteen accommodation for the Corporation departments.

PETERBOROUGH.—It has been decided to proceed immediately with a war memorial by the erection of a new hospital costing between £50,000 and £57,000.

SALFORD.—The T.C. has passed plans for alterations and additions to premises, Borough-road and Eccles New-road, Pendleton; seating accommodation, Picture Theatre, Langworthy-road, Pendleton; conversion of two buildings into one, Broad-street, Pendleton; reconstruction of insanitary property, 12 and 14, Coke-street, Broughton.

SEVENOAKS.—The L.G.B. has held an inquiry at the Council Offices, Argyle-road, Sevenoaks, into an application by the U.D.C. for sanction to borrow £50,100 for the purchase of land at Greatness-lane, Greatness Park and Solefields, and for building, after the termination of the war, 150 houses, under Part III of the Housing of the Working Classes Act.

SOUTH SHIELDS.—Plans passed by T.C.:—Electric supply sub-station, Corstorphine Town, for Mr. P. A. R. Smith, of Messrs. Smith's Dock Co., Ltd. A plan for Mr. J. H. Morton, architect, for the conversion of business premises, 45, King-street, for Mr. E. S. Fenwick, is before the Committee.

ST. HELENS.—The Health Committee has decided to abandon its housing scheme, which was decided on in 1914, and to acquire if possible three new sites for a housing scheme on garden city lines.

TWICKENHAM.—Plans passed by U.D.C.:—Mr. Edwin Stephens, in respect of alterations and additions at Ivy Lodge, London-road; Mr. J. Wills, in respect of the erection of a bungalow in Kneller-road.

URUGUAY.—According to a law of June 27 the Uruguayan Government is to construct municipal laundries or washing places in all the cities of the Republic. These buildings are to be completed within four years, and are to be erected in series of four, the first four to be built in Salto, Paysandu, Mercedes, and San José. The Government is authorised to expend not more than 22,000 pesos per year for the purpose.

WEYMOUTH.—Plan passed:—Re-roofing pattern shop, St. Nicholas-street, for Messrs. Cosens & Co.

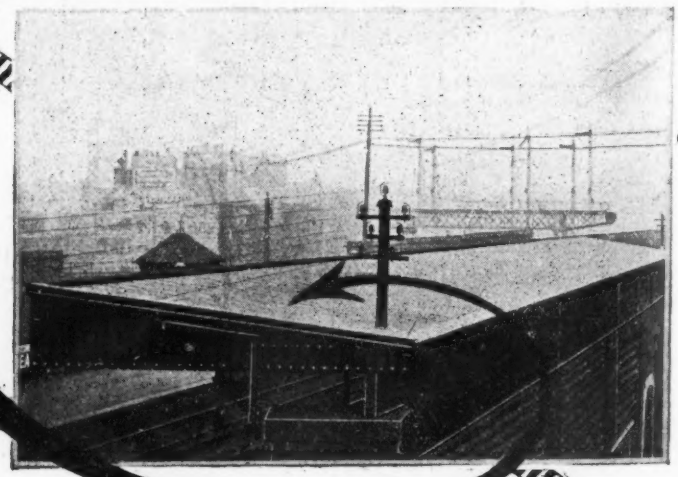
FIRES.

AIRDRIE.—Cowan's sale rooms and premises in Stirling-road, occupied by Messrs. Sellar & Co., have been destroyed by fire.

EDINBURGH.—Much damage has been done by fire to the premises of Mr. Colin M'Andrew, building contractor, Lauriston Gardens.

*See also our list of Competitions, Contracts, &c., p.236.

ROK ROOFING



THAT risk from fire is negligible with the use of "ROK" Roofing, is proved by the many Railway contracts we have executed.

"ROK" is economical, because it outlives iron—is cheaper than slates or tiles and needs no annual tarring or other coating.

It is the most permanent roofing withstanding the severest climatic tests in every part of the World. It withstands acid and chemical fumes, heat or frost, and the heaviest downpour cannot penetrate "ROK."

The illustration shows Gorbals Station, Glasgow, Barrhead and Kilmarnock Railway.

Send for a copy of our new booklet "E," which gives the fullest particulars of "ROK" roofing, and shows some fine illustrations of a few of the world-wide contracts supplied by us. **"ROK" is British Made.**

D. ANDERSON & SON Ltd., Lagan Felt Works, BELFAST.
and Roach Road Works, Old Ford, LONDON, E.

7

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.
Best Stocks 3 3 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	2 7 8	Best Blue Pressed Staffordshire ...	7 18 6
Best Stourbridge Fire bricks	9 5 0	Do. Bullnose ..	8 3 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers ..	17 17 6	D'ble Str'tch'rs	23 7 6
		D'ble Headers	20 7 6
		One Side and two Ends ..	24 7 6
Headers.....	17 7 6	Two Sides and one End	25 7 6
Quoins, Bullnose and 4½in. Flats	21 7 6	Splays and Squints.....	22 17 6

Second Quality, £1 per 1.000 less than best.
Glazed bricks priced at so much each, 50 per cent. advance on list.
Permission to be obtained from Director of Supplies for Flettons, Wire Cuts, &c.

	s. d.		
Thames Ballast	17 0	per yard,	delivered
Pit Sand	16 0		
Thames Sand	17 0	,, ,,	2 miles
Best Washed Sand	17 0	,, ,,	radius
¾ in. Shingle for Ferro-Concrete	15 0	,,	Paddington.

Per ton, delivered.

	£ s. d.	£ s. d.
Best Portland Cement	3 3 0 ..	3 6 0

Do. £2 16s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 2 2 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube..	2 11½

White basebed, 2d. per ft. cube extra.
NOTE —½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 10	Closeburn Red Freestone	3 0
Beer in blocks ...	1 9	Red & White Mansfield random block	4 8
Grinshill in blocks	2 6	Yellow Magnesian Limestone do. do	3 9
Darley Dale in blocks	2 10		

YORK STONE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks .....Per Ft. Cube	5 10
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	4 6
6 in. rubbed two sides, ditto ..... ,,	4 11
3 in. sawn two sides slabs (random sizes) ,,	2 0
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	1 3
1½ in. to 2 in. ditto, ditto ..... ,,	1 1

HARD YORK—

Delivered at any Goods Station London.	s. d.
Scappled random blocks .....Per Ft. Cube	5 5
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	4 2
6 in. rubbed two sides ditto ..... ,,	4 7
in. sawn two sides slabs (random sizes) ,,	1 11
2 in. self-faced random flags ..... ,,	0 10

WOOD.

TIMBER CONTROL ORDER, 1918.

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD

	1st £	2nd £	3rd £	4th £		1st £	2nd £	3rd £	4th £
4 ×11.....	59	57	55	53	2 × 9.....	53	51	49	47
4 × 9.....	56	54	52	50	2 × 8.....	52	50	48	46
4 × 8.....	53	51	49	47	2 × 7.....	52	50	48	46
4 × 7.....	53	51	49	47	3 × 6	unsorted			47
2½ & 3×11..	58	56	54	51	2½ × 6	unsorted			47
2½ & 3×9 ..	53	51	49	47	3 × 5	unsorted			46
3 × 8.....	52	50	48	46	2½ × 5	unsorted			46
3 × 7.....	52	50	48	46	2 × 6	unsorted			47
2½ & 7/8	52	50	48	46	2 × 5	unsorted			45
2 ×11.....	58	56	54	51	2 × 4	unsorted			45

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.
Boards, 1st and 2nd, £2 10s. extra.
Boards, 3rd and 4th, £1 10s. extra.

WHITE SEA WHITEWOOD.

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £.
3×11	57	55	50	3×8 u/s ..	48		
3×10	54	52	49	3×7 u/s ..	48		
3× 9	52	50	48	2½&2× 8 u/s	48		

	£ s. d.		£ s. d.
2½& 2×7 u/s..	48 0 0	2½× 5 u/s ..	46 0 0
3 ×6½ u/s....	47 10 0	3 × 5 u/s....	46 0 0
2 ×6½ u/s....	47 10 0	2 × 5 u/s....	45 0 0
2½& 3×6 u/s..	47 0 0	2 × 4 u/s....	45 0 0
2× 6 u/s	47 0 0		

Boards, £1 10s. extra per std.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £50 per std.

SAWN LATHS, 3s. 9d. per bundle.

U/S SLATING BATTENS (yellow and white and strips), £44.

5th ditto, £42.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.

U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1½in. P.E. at 71/6	¾in. P.E. at 37/-
1¼in. P.E. at 60/-	½in. P.E. at 31/-
1in. P.E. at 47/-	⅜in. P.E. at 23/-
¾in. P.E. at 41/-	

If tongued and grooved or tongued and grooved and matched, 9d. per square extra.

1in. × 11in. P.E. at £54 1in. × 9in. P.E. at £51
1in. × 10in. P.E. at £53 1in. × 8in. P.E. at £49

CANADIAN AND AMERICAN YELLOW PINE

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £
3×12 and up	80	69	67	3× 8	62	55	53
3×11	78	63	61	3× 7	60	53	51
3×10	66	58	56	3×4/6.....	58	51	49
3× 9	64	56	54				

For complete specification and controlled prices, see issue of September 6, page 148.

Dry Wainscot Oak, per ft. super, as inch	0	3	0	..			—
¾ in. do. do.	0	2	3	..			—
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as incn	0	3	0	..	0	4	0
Cuba, Manogany	0	3	0	..	0	4	0
Teak (Rangoon, Moulmein or Java), per load.. ..	70	0	0	..	85	0	0
American Whitewood planks, per ft. cube ..	1	8	0	..	1	10	0
Glue, per cwt.	12	0	0	to	13	0	0

SLATES.

Per 1,000 of 1,200 f.o.r. London.

		£ s. d.
Best Blue Bangor Slates,	20 by 10	21 0 0
,, ,,	16 by 8	10 0 0
First quality ,,	20 by 10	20 0 0
,, ,,	16 by 8	10 5 0
Best Blue Portmadoc	20 by 10	20 0 0
,, ,,	16 by 8	10 0 0
First quality ,,	20 by 10	19 10 0
,, ,,	16 by 8	9 15 0

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	4 15 0
Ditto hand-made ditto.....	5 0 0
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen)	0 9 0

METALS.

JOISTS, GIRDERS, ANGLES, C.I. COLUMNS, &c.
(*Prices controlled by Ministry of Munitions.*)

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	31½	35	36½	37½
Water	26½	32½	31½	35
Steam	21½	30	26½	32½
Galvanised Gas ..	8½	27½	12½	30
,, Water	—	25	3½	27½
,, Steam	6½ *on*	22½	2½ *on*	25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts..	4 2 ..	3 1 ..	3 8
2½ in. ,, ..	4 9 ..	3 5 ..	4 7
3 in. ,, ..	5 10 ..	3 8 ..	5 6
3½ in. ,, ..	6 6 ..	4 7 ..	6 6
4 in. ,, ..	7 1 ..	5 2 ..	7 3

RAIN-WATER PIPES, &C.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 9½ ..	1 8½ ..	2 4½
2½ in. ,, ,, ..	3 1 ..	1 11½ ..	2 9½
3 in. ,, ,, ..	3 8 ..	2 6½ ..	3 8
3½ in. ,, ,, ..	4 5 ..	3 0 ..	4 3½
4 in. ,, ,, ..	4 10 ..	3 6 ..	5 3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 7s. 7d. .. 5 in., 9s. 2d. .. 6 in., 10s. 9d.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars - good merchant quality	17 0 0	..	17 10 0
Staffordshire "Marked Bars"	18 0 0	..	19 0 0
Mild Steel Bars	21 0 0	..	21 10 0
Steel Bars, Ferro-Concrete quality, basis price ..	19 10 0	..	20 0 0
Hoop Iron, basis price ..	20 10 0	..	21 10 0
,, ,, Galvanised ..	33 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g. ..	23 0 0	..	23 10 0
,, ,, 24 g. ..	24 0 0	..	24 10 0
,, ,, 26 g. ..	25 0 0	..	26 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. ..	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.....	34 0 0	..	34 10 0
Ordinary sizes to 26 g. ..	36 0 0	..	36 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g. ..	35 10 0	..	—
,, ,, 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g. ..	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.....	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.....	33 10 0	..	
Ordinary sizes, 26 g.	32 10 0	..	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.....	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0

(Under 3 in.. usual trade extras.)

LEAD, &c.

Delivered in London.	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	40 0 0	..	—
Pipe in coils	40 10 0	..	—
Soil-Pipe	43 10 0	..	—
Compo pipe	44 10 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

COPPER—				
Strong Sheet ....per lb.	0	2	3	Class A certificate required for all Copper, Tin and Solder purchases.
Thin ,, ... ,,	0	2	4	
Copper nails .... ,,	0	2	3	
Copper wire .... ,,	0	2	4	
TIN—English Ingots ,,	0	3	9	
SOLDER—Plumbers' ,,	0	1	10	
Tinmen's..... ,,	0	2	4	
Blowpipe ..... ,,	0	2	8	

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	7d.	32 oz. fourths	10d.
,, thirds	7½d.	,, thirds	11d.
21 ,, fourths	8d.	Fluted, Obscured and	
,, thirds	8½d.	Enamelled Sheet,	
26 ,, fourths	9d.	15 oz.	7½d.
,, thirds	9½d.	21 ,,	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	5½d.
7/16 Rough rolled and rough cast plate.....	6d.
½ Rough rolled and rough cast plate.....	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	6d.
White Rolled Cathedral.....	6d.
Tinted do.	6½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes..... per gallon		0 8 0
,, ,, ,, in barrels .... ,,		0 8 4
,, ,, ,, in drums .... ,,		0 8 7
Boiled ,, ,, in barrels .... ,,		0 8 7
,, ,, ,, in drums .... ,,		0 9 0

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1.

Turpentine in barrels	,,	0	11 3
,, in drums	,,	0	11 6
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		60	10 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots..per ton delivered		83	10 0
Red Lead, Dry (packages extra) .. per ton		47	0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	1	2	0
Filocol.....	per cwt.	1	0	0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 16 0
Pale Copal Oak	0 17 0
Superfine Pale Elastic Oak.....	0 19 0
Fine Extra Hard Church Oak	0 18 0
Superfine Hard-drying Oak, for seats of Churches	1 1 0
Superfine Pale Elastic Carriage	1 1 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal.....	1 5 0
Extra Pale French Oil	1 4 0
Eggshell Flatting.....	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper.....	0 16 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 12 0
Brunswick Black	0 10 0
Berlin Black.....	0 16 0
Knotting	1 10 0
French and Brush Polish	1 0 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

Competitions, Contracts, &c.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

BUILDING AND PAINTING.

OCTOBER 12. — **Stockton.** — ALTERATIONS. — For alterations at Maternity Home, for the Corporation. Plans of the Borough Engineer, Victoria Buildings, Stockton-on-Tees.

OCTOBER 19.—**Battle.**—WELL.—For sinking of well at Netherfield Hall, for the Urban District Council, Mr. F. C. Shepherd, Clerk to the U.D.C., Battle.

NOVEMBER 13.—**Bedford.**—BUILDINGS, &C.—The Corporation of Bedford invites tenders for the erection of buildings and reinforced concrete coal bunkers. Specifications from the Engineer, Electricity Works, Cauldwell-road, Bedford. Deposit £1.

FURNITURE, MATERIALS, etc.

OCTOBER 14.—**Warrington.**—FURNITURE.—The Warrington Local War Pensions Committee invite tenders for various furniture required at their offices, 4, Museum-street. Specifications, &c., of the Borough Surveyor, Town Hall.

OCTOBER 15 AND 16.—**London.**—FURNITURE.—The Commissioners of His Majesty's Works, &c., invite tenders on (*a*) Tuesday, October 15, and (*b*) Wednesday, October 16, 1918, addressed to the Secretary, H.M. Office of Works, &c , Storey's-gate, Westminster, London, S.W. 1, for supply of: (*a*) easy wicker chairs, (*b*) furniture (various). Forms of tender of the Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

ENGINEERING, IRON AND STEEL.

OCTOBER 14.—**Drumlithie.**—BRIDGE.—The Directors of the Caledonian Railway Co. invite tenders for the removal of the existing cast-iron superstructure of the bridge carrying the Company's main lines over the Bervie Water, near Drumlithie, and construction of a new steelwork superstructure. The works comprise the construction of masonry work, the supply, delivery and erection of about 135 tons of wrought steel work. Drawings of the Company's Engineer, Buchanan-street, Station, Glasgow. Deposit £2 2s.

OCTOBER 16.—**Manchester.**—HEATING APPARATUS.—Tenders are invited by the Manchester Education Committee for providing and fixing a low-pressure heating apparatus at the Extension to the Education Offices, Deansgate, Manchester. Specification at the Education Offices. Deposit £1 1s.

OCTOBER 22.—**Warrington.**—BOILER.—The Electricity and Tramways Committee of Warrington invite tenders for one water tube boiler. Specification of Mr. F. V. L. Mathias, Borough Electrical Engineer, Howley, Warrington. Deposit £1 1s.

Public Appointments.

✱**Winchester.**—The County Surveyor of Southampton requires a temporary architectural assistant. Apply (marking envelope "Architectural Assistant"), County Surveyor, The Castle, Winchester.

Auction Sales.

✱OCTOBER 15. —**London.**—Messrs. Skelding & Co. will sell the surplus plant machinery, and stock of a Builder and Contractor, on the premises, Dorset Works, 237, Kensal-road, and the Plant Yard, Eastrow, Paddington, W., including a Crossley's gas engine, woodworking plant and machinery, seven electric motors, a quantity of useful timber, &c. Auction Offices, 48, Gresham-street, E.C. 2.

✱OCTOBER 22.—**London.**—Mr. W. F. Laing will sell on the premises, 1 and 2, Tottenham-square, Tottenham-road, Kingsland, N.E., salvage stock, comprising rope, canvas sacks, &c. May be viewed day prior and morning of sale, and catalogues obtained at the Auctioneers Offices, 148, Whitechapel road, E. 1; and Grahame-road, Mitcham, Surrey.

✱OCTOBER 22.—**Chelmsford.**—Messrs. Alfred Darby & Co. will sell on the premises, The National Steam Car Co.'s New Motor Garage, Duke-street, Chelmsford, the valuable plant and machinery, comprising: Gas engines, suction gas producer, circular saw bench, rack saw bench, &c.; also Ford motor-car and van. Catalogues may be obtained of the Auctioneers, Chelmsford.

✱OCTOBER 28 TO NOVEMBER 1.—**London.**—Mr. H. Butcher will sell the stock-in-trade of an ironmonger and builder's merchant (119, Falcon-road, 2, 4 and 6, Lavender-terrace, and 4, Lavender-road, Battersea, S.W.). For convenience the sale will be held in the Large Hall at Stanley's Restaurant, 235, Lavender-hill, S.W. The stock includes pipes and gutters, fittings, plumbers' brass works, two weighing machines, &c. Also the long leases of the extensive premises, including goodwill. Catalogues (when ready, 1s. each) and particulars from Messrs. Taylor, Wilcocks & Co, 240, Lavender-hill, S.W. 11, and 218, Strand, W.C., Mr. Harold Griffin, 54, High-street, Battersea, or Henry Butcher & Co., 63–4, Chancery-lane, W.C. 2.

NEW COMPANIES.

The particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W. . 2, from the documents available at the Companies Registry :—

ALLIES-UTILITIES, LTD. (151,503.) Registered September 24, 1918. To carry on the business of manufacturers, merchants and dealers in machinery, tools, implements and utensils of all kinds. Nominal capital, £5,500.

THE BATLEY BARLESS FIRE CO., LTD. Well-lane, Batley, York. (151,441.) Registered September 17, 1918. To acquire and carry on the business of manufacturers of barless fires carried on by Wood & Robertshaw, of Batley. Nominal capital, £1,000.

EAST LONDON GLASS WORKS, LTD. (151,498.) Registered September 21, 1918. To carry on the business of manufacturers of glass articles of every variety and kind and also of materials, plant and machinery for producing such goods. Nominal capital, £5,000.

J. J. ETRIDGE, Jr.
SLATE MERCHANTS, LTD.
EXPERTS IN
SLATING, TILING.
STRIPPING AND RELAYING.
Telephone: Avenue 4849 (two lines), or write
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

For GLASS SHELVES & TABLE TOPS

Apply to
JAMES CLARK & SON, Ltd.
Railway Arches, Blackfriars Rd., London, S.E. 1
CLASS POLISHERS, DRILLERS, BEVELLERS.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.*

LONDON.—For laying of slag tar macadam in New Cavendish-street, for the St. Marylebone B.C. :—
*Constable, Hart & Co. £520

SALFORD.—For installation of heating system at St. Sebastian's School, for the Managers :—
*J. H. Gilbody, Manchester £85

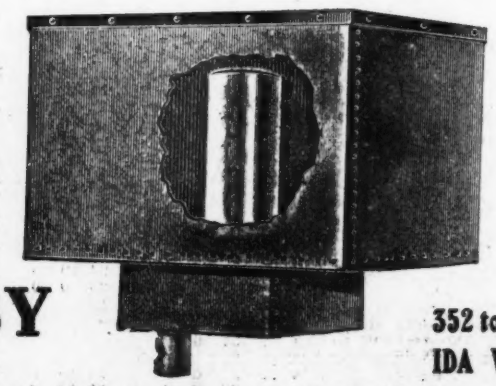
SOUTH SHIELDS.—For the erection of mortuary, for the Corporation :—
*G. Thornton £302

THE LONDON & LANCASHIRE FIRE INSURANCE COMPANY LTD.
Premiums - - £3,497,074
Reserve Funds - £4,078,996
FIRE.
CONSEQUENTIAL LOSS.
ACCIDENTS.
BURGLARY. PLATE GLASS.
EMPLOYERS' LIABILITY.
MARINE.
Head Offices { 45, Dale Street, Liverpool. 155, Leadenhall Street, E.C.

"COATOSTONE."
Effect of Natural Stone. Waterproof
Any Painter can use it.
COATOSTONE DECORATION CO.
(Proprietors: The Stone Preservation Co., Ltd.)
9a. LITTLE JAMES ST., GRAY'S INN, LONDON, W.C.1

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, Moorgate Station Chambers, Moorfields, E.C. 2—The best and cheapest materials for dampcourses, railway arches, warehouse floors, flat roofs, stables, cowsheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co.

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS, COLCHESTER.
Telephone: 0195. Telegrams: "Orfeur, Colchester."

BRABY'S Automatic Flushing Tanks.
SIMPLE.

RELIABLE.
FRED^K BRABY & CO., LTD.,
352 to 364, EUSTON ROAD, N.W.1
IDA WORKS, DEPTFORD, S.E.8 } LONDON.